FEEDSTUFFS®

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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No Agreement Near On Proposals for Support Program

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — The appearance of Marvin McLain, assistant secretary of agriculture, before the Senate agriculture committee this week concerning the administration's farm price support proposals met with indifference from Sen. Allen J. Ellender (D., La.), committee chairman. Sen. Ellender said there was little chance that Congress would enact the proposals.

Hearings in the House also show no sympathy for the so-called omnibus farm price support bill.

The administration has asked for discretionary authority for the U.S. secretary of agriculture to set price support levels for the basic commodities between 60 and 90% of parity, that the flexible price schedule requirements be repealed and that corn acreage allotments be abandoned.

Mr. McLain said that in the absence of approval of administration proposals, the U.S. Department of Agriculture would again impose a loan for all corn grown as it has done in the past two years when acreage allotment control became virtually inoperative through noncompliance. He said USDA might

(Turn to SUPPORT, page 8)

SUPPORT RATES UNCHANGED

WASHINGTON—Oats, barley, rye and grain sorghums for the 1958 crop will be supported at 70% of the February, 1958, parity price, the U.S. Department of Agriculture announced Feb. 21. This 70% level represents no change from the 1957 rates. National average support prices for these commodities follow: Oats, 61¢ bu.; barley, 93¢ bu.; rye, $1.10 bu.; grain sorghums, $1.83 cwt. Soybeans will be supported at 70% of February parity also, or at $2.09 bu. Flaxseed will be supported at 65% of parity, or $2.78 bu. Cottonseed also will be supported by USDA at 65% of February parity.

Farmers Plan to Buy 6% More Chicks in '58

WASHINGTON—Farmers are now planning to buy 6% more baby chicks this year than in 1957.

This indicates a potential for an increase in chick starting and growing feed business this spring as compared with a year ago.

The report of farmers' intentions to buy chicks was issued by the U.S. Department of Agriculture in its latest crop report.

An increase in the number of chicks raised in 1958 for laying flock replacement had been expected in view of egg and feed price relationships, but there was some thought that the increase might be larger than that now indicated.

However, it also has been pointed out that increasing specialization in egg production has been resulting in less change in numbers of chickens raised than would be expected in former years under given changes in egg-feed price relationships. Also, the very low egg prices in the year ending September, 1957, may deter expansion somewhat.

As USDA pointed out, some differences between farmers' February plans and their actual purchases are to be expected depending on egg and feed price relationships and other developments during the hatching season.

However, as things now stand, an increase of no more than 6% is now indicated.

May Hold Up Prices

The indicated 6% increase indicates no "bust" in a normal boom-bust situation. The per capita egg supply next fall may not exceed the past fall to much extent, and egg prices in the second half of 1958 may be close to corresponding 1957 levels.

USDA pointed out earlier that if the rise in numbers of chickens raised in 1958 is held to 5 or 6% above the 394 million of 1957, only a moderate increase in egg output will take place in the fall. The 6% increase will tend to maintain the fall laying flock at about the same total as a year earlier because the fewer hens on hand from the reduced 1957 hatch will offset the expected increase in pullets.

The new report on intentions to buy chicks shows that all regions of the country indicate purchases to be above last year. The biggest percentage change is a 14% increase seen for the south central states. A 6% increase is indicated for the south Atlantic region. In the important north central states, a 5% increase is indicated. A 4% increase is planned in the western states and a 3% increase in the north Atlantic region.

USDA also reported that farmers now plan to purchase 33% of their

(Turn to CHICKS, page 112)

More Corn, Cotton Acreage May Come Under Soil Bank

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—Groundwork was laid this week for the removal of about 7.1 million acres of corn land and 5.1 million acres of cotton land from 1958 production, based on formal action taken by the House Appropriations Committee in a supplemental appropriations measure.

The committee has reported the bill to the House floor, where action is expected next week. At the same time, the Senate Committee announced it would plan prompt action as its chairman, Sen. Richard Russell (D., Ga.), expressed approval of the House action.

The House Committee action took observers by surprise. Its action on the soil bank provisions for these two major crops may mark the most important legislation which can be expected for these two crops on the farm price support front this session of Congress.

The House Committee, which recently met with U.S. Department of Agriculture soil bank officials, had been informed that applications to sign up for the acreage reserve program of the soil bank for 1958 corn and cotton exceeded available funds by approximately $175 million on the basis of preliminary estimates on hand at that time.

The committee told USDA to prepare final estimates for the Senate on additional sums of money which would

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Iowa Reports New Swine Research, Recommendations

By JAMES E. SHARON
Feedstuffs Staff

AMES, IOWA—New research results and recommendations on uses of thyroprotein, antibiotics, arsenicals, enzymes, anemia preventives and improved housing—all tied into new aspects of life-cycle swine production—were given to more than 2,000 swine producers and others in a two-day session here this week.

The combined Iowa Swine Feeders Day and Swine Housing Conference also was the scene of what was probably the Corn Belt's first major debate on the controversial subject of integration in the hog industry.

Of further interest was the presentation of a complete, up-to-date set of swine managment recommendations prepared jointly by Iowa State College, Feed Institute, Inc., the Midwest Feed Manufacturers Assn. and the Western Grain & Feed Assn.

New Feeding Suggestions

Here is a brief summary of some of the new suggestions developing out of swine nutrition research, as reported by three Iowa State scientists—Dr. Damon Catron, Dr. Vaughn Speer and Dr. Virgil Hays:

Highly fortified, high-energy rations containing thyroprotein should be full-fed to sows from farrowing until the pigs are weaned (not over 5 weeks) in order to get maximum milk flow, especially of colostrum milk containing antibodies. Feeding 100 milligrams of thyroprotein—iodinated casein—per pound of sow ration to 235 sows produced pigs weighing .4 lb. more at one week of age

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FEEDSTUFFS *Features This Week*

POULTRY NUTRITION: Reports on recent poultry nutrition research given at the Southern Agricultural Workers meeting are reviewed on **page 10.**

POULTRY PRODUCTION: Factors affecting the location of egg and poultry production are discussed on **page 20.**

CATTLE FEED ECONOMICS: An economist gives basic information on figuring cattle feed costs and returns on **page 32.**

TENDERIZERS: On **page 34** is a discussion of the increased use of enzyme tenderizers by meat packers.

THYROACTIVE SUPPLEMENTS: Their value in feeding dairy cows in successive lactations is discussed on **page 104.**

SALES AND SERVICE: The value of a feed serviceman is the subject of an article on **page 46.** How a New Jersey dealer handles collections is discussed on **page 89.** Winning good will through a 4-H awards project is the subject of a story on **page 102.**

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Florida Areas Get USDA Feed Aid

WASHINGTON—The U.S. Department of Agriculture has announced an emergency feed program for 29 counties and parts of two others in Florida which have been designated as disaster areas because of severe weather.

As in previous programs in drouth and flood areas in other parts of the country, eligible stock men will be able to purchase designated grains or special mixed feeds at a reduction of $1 cwt. of grain. The feeds are to be used for maintenance of foundation herds of cattle and sheep.

This aid program is now scheduled to continue through March 31.

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Getting Better Acquainted

ONE obstacle to improving service to feeders which quite often is cited by thoughtful men in the feed industry is lack of full cooperation between feed men and veterinarians. Often, too, comments from the veterinarian interests call attention to this continuing problem.

Of course, recognition of a problem is a starting point in trying to do something about it. Even more important, though, is getting members of the two groups together for frank discussion of any difference they might have.

An effective move in this direction has been made by feed men and veterinarians in two of the states served by the Midwest Feed Manufacturers Assn., and indications are that the same pattern may be followed in other states.

Lloyd Larson, executive vice president of the Midwest, recently appeared at a meeting of the Kansas Veterinary Medical Assn. in Wichita to discuss what could be done to develop better understanding between the feed industry and the veterinarians. As a result, a committee has been appointed by the Kansas veterinarians to work with feed manufacturers. Earlier, Mr. Larson made a similar appearance at a meeting of Nebraska veterinarians. In that state committees composed of feed men on the one hand and veterinarians on the other have been meeting together for several months, and a frank and open exchange of ideas among the members has started the ball rolling in the right direction there.

In describing this Nebraska activity to the Kansas veterinarians, Mr. Larson said: "I think the most important thing we did was to get acquainted with one another. We learned to know one another and discovered that there is a pretty good bunch of fellows in both groups, which was the first step in correcting the terminology commonly used in describing one or the other—by the other—of the veterinarian or feed man.

"It has been appropriately stated that from both a practical and scientific standpoint, it is impossible to separate health from nutrition. You as veterinarians are primarily interested in maintaining healthy livestock, which is nigh impossible under conditions of poor nutrition. Feed men are interested in providing the very best nutrition in the form of today's modern formula feeds, for the most efficient production of meat, milk and eggs, and yet these feeds will not produce profitable results if diseases are prevalent."

★ ★ ★

WHAT must be solved by the two interests are gripes such as these: Dr. John Aiken, chairman of the Nebraska veterinarian committee, recently said: "Diagnosis and treatment of diseased conditions in livestock by the feed salesmen without consultation with the veterinarian is a problem which antagonizes more veterinarians than all the other problems combined."

On the other hand, feed men often cite the "unfriendly attitude" of veterinarians and point out that they sometimes show lack of appreciation of the feed industry and its products. One feed man, in response to a Midwest query, said: "The veterinarian blames 'improper nutrition' as a cause of problems he cannot diagnose. He suggests shotgun, obsolete feeding changes to try to overcome problems and resists medication in feeds."

Criticism is not always this strong, but criticism there is. On the other hand, some feed men commend their veterinarians. One, in response to the same Midwest query, reported: "We have two veterinarians who welcome our recommendations and have helped us in selling a feeding program to feeders. They have informed the feeders to use, not only our feeds, but other feeds in the manner in which the feed company outlines the program."

Another feed man said: "Unless we have a personal contact at a local level, I would say the veterinarian looks at us with an unfriendly attitude. If he is unable to diagnose a particular animal's ailment he frequently blames the trouble on the feed manufacturer. However, we find the veterinarian will respond to friendly and courteous treatment."

Work of associations, such as that done by the Midwest, is important in breaking the ice. Yet, feed men should recognize that the real accomplishments of such programs are made at the local level. It is not too difficult to do, if one is willing to go a little out of his way to welcome friendly relationships. For an example of a good approach, see the picture presentation on pages 94 and 95. This feed man got results, and others can do the same.

Smoothing out frictions that have made rough going for years cannot be done in a day, but there is little doubt that progress must be made in this field because it is vitally important to the future of agriculture.

Dr. Aiken, in addressing the feed men not too long ago, made this observation: "You as an industry and we as a profession are here to stay. Twenty-five years ago it was commonly thought that the veterinarian would fade with the horses. I would imagine the feed industry at that time had no concept of the tremendous growth it would make. The progress in these two fields in that short span is phenomenal. I fully believe that the next 10 years will show even greater progress.

"We are in an era of more and more specialization. I believe that we should recognize this trend and prepare ourselves to meet it. I expect to see more professional farmers who will be more scientific in their approach, more specialized in their operations and more demanding of the services which they require."

Such specialization, which everyone agrees is bound to develop rapidly, calls for much mutual respect and cooperation among the various specialists. It's time to specialize, too, in getting to know one another better.

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

Cold weather over much of the nation and heavy snows in eastern states kept feed demand at a relatively strong pace during the past week. Only along the West Coast was the feed business lagging. There ideal winter growing weather held down demand. Hog feeds continued to be leaders in most areas with an increase in chick starters building sales in others. The Southeast continued to suffer from the cold winter. There mill production was up as dealers had heavy demand. A slack off in citrus pulp production was also noted. The index of feedstuff prices advanced to 76.1 compared with 75 the previous week and 82 a year earlier. The feed grain index climbed to 62.7 as against 62.2 the week before and 73.4 a year ago. (Details on ingredient prices on pages 110-112.)

Northwest

A slight pick-up in feed sales was noted by area mills during the past week. The increase was general, according to feed mill representatives, with no particular hump on any type of feed.

Starters were continuing to move, though not as rapidly as had been expected. The big seller, however, continued to be hog feeds. Supplements used with wet corn were selling well despite the approach of warm weather.

Prices went up slightly with the increase in animal proteins, soybean oil meal and millfeeds. The general increase was about $1 to $2.

With the increased demand, mills were running at about normal capacity. Order backlogs were improved, but not large.

Turkey placements were reported to be good, and the sales of turkey feeds were good. Poultry feeds were good, cattle feeds held steady and dairy feeds continued their lag in sales.

The month generally continued to run ahead of the same month a year ago.

Southwest

A higher price structure was about the only feature to the formula feed market in the Southwest that was much different from the previous week. Sales volume and running time rocked along at about the same pace as recently—not rushing, but enough to keep mills operating on about five days, normal shifts. Order backlogs were not large, many mills operating very close to the stream, but always uncovering some business as they filled the last orders.

Hog feed business continues to be one of the brighter spots in the sales pattern. There was concern expressed, however, that buyers would back off from concentrates because of the extreme strength that has been shown by animal protein.

Chick starters were moving, but not in any large volume. Sales departments reported that it is the bigger hatcheries that are hatching the early chicks, the smaller ones apparently still hesitant. Much of the starter movement was undoubtedly going onto dealer shelves. Laying feeds and broiler rations were in reasonably good demand. The first of the turkey feed was said to have been shipped this week, but the real start of this business was not expected for another 30 days.

Fair demand prevailed for cattle feed, with the most interest in the range feeds needed to keep mother cows healthy during calving time. Dairy feed is moving reasonably well.

The over-all outlook for feed business in the Southwest was optimistic, most sales departments agreed. Feeders were optimistic as end-product markets held strong and feed prices remained attractive.

Feed prices were expected to be up 50¢ on the low protein items and as much as $2.50 ton on high protein concentrates, especially those with animal protein.

Central States

Feed manufacturers seemed to be working on another good month, and the fact that the business follows a large volume score set in January made for cheerful spirits. Some feed makers chalked up record tonnage figures for January, and they said February promises to show good gains if the present pace could be maintained.

Observers were not quite sure of all the factors which made for the good run of business, but a great deal of the influence was attributed to the continued run of cold weather. Animals and poultry have been kept inside and fed, and the cold has increased feed requirements to maintain energy, body weight and health.

Most mixers were working to capacity for a five day week and had some backlogs to work off.

Northeast

Severe blizzards battered both the dairy farmer and the feed manufacturer during the past week.

Operations of feed mills slumped as railroad service to mills bogged down to hamper raw materials from entering the mills and curbed shipments of finished products.

Dairy feed demand suffered because farmers were unable to reach

(Turn to MARKETS, page 114)

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Washington School Emphasizes Modernization of Feed Mills

By ROGER S. BERGLUND
Feedstuffs Managing Editor

YAKIMA, WASH. — The emphasis was on "mill modernization"—making feed plants more efficient to keep pace with fast-moving changes in agriculture and the feed industry—as some 150 feed men from the Pacific Northwest gathered here recently for the annual Washington Feed Mill Production School.

The one-day school was held as part of the 31st annual convention of the Washington State Feed Assn. Feb. 13-14 at the Chinook Hotel in Yakima.

Speakers from machinery and other firms presented information and advice and answered questions on such phases of mill operation as grinding, mixing, batch proportioning, bulk handling, pneumatic conveying and mill design.

Arthur Wilde, California Pellet Mill Co., Seattle, was general chairman of the school. Among others heading parts of the event were Duane Tyler, Reid-Strutt Co., Portland; Forrest Larson, Larson & Baardson, Tacoma, and Robert Adelman, Adelman Equipment Co., Seattle.

The program included information on such basic things as grinding and mixing, and it also called attention to developments in such things as automation and new methods of handling materials.

Following are condensations of talks presented:

MILL MODERNIZATION—Duane Tyler, Reid-Strutt Co., Inc., Portland: Mill modernization is attracting more attention these days, being brought on by such things as higher labor costs, heavy taxes, more products, higher selling costs, increased service requirements and nutrition advances. The industry must continue to modernize to eliminate down-time and improve efficiency. There have been more changes in feed production in the last three to five years than in the previous 20.

Modernization often can mean little change that lowers costs. It doesn't necessarily involve great capital investment.

However, modernization does take sound planning to conform with current needs, area growth and projected future needs.

BATCH PROPORTIONING—Robert Schonfisch, Richardson Scale Co., San Francisco: Design highlights in batch proportioning include:

1. Ingredient bins should be of proper size; the material affects the design of the bin. For good flow, bins should have such things as a large enough opening, a slope greater than the angle of repose of the ingredient and something to help at the maximum pressure point (the level where the bin slope connects with the vertical side).

2. A material feeder or cut-off device to cut off flow. Air gates work only with the best-flowing materials; otherwise screw feeders are best, pulling material evenly from the bin.

3. A weigh hopper should have an inlet of suitable size and must incorporate good bin principles.

4. Control panel. Whether one uses a push button or automatically operated system, the panel should be near the dial head. By using an electronic panel, one can centralize the control system. Some systems have printers that record both identity and weight of each ingredient going into a batch. Control panels of the automatic type can be large or small. You might have a system where most ingredients are handled by bag but where four materials are handled in bulk automatically.

(Mr. Schonfisch demonstrated a feed proportioning panel with which ingredients and weights are selected and proportioning is then performed automatically, for as many batches as are desired, and mixing time is controlled. Generally a compensator is included so that weights can be adjusted properly.)

GRINDING OR PARTICLE SIZE REDUCTION—George Thomas, Prater Pulverizer Co., Chicago: To facilitate a proper recommendation on a hammermill, certain information is needed: (1) The product or products to be ground should be properly identified. (2) Any unusual characteristics should be spelled out. Such properties as moisture, fiber and oil content, abrasiveness, bulk density, toughness and even friability, if known, should be identified. (3) The size of the raw feed should be known. (4) Required size range of the finished product is important. (5) Capacity on an hourly basis. (6) If pneumatic conveying is to be provided, distance required. (7) Prevailing electrical characteristics and type of motor needed.

It would help to have industry standardization as to what constitutes a finished product according to mesh size. The Grain Processing Machinery Manufacturers Assn. has been working on this.

In selecting a motor, the cost of reasonable over-motoring is generally warranted, particularly when more than one product is being processed.

Certain factors in hammermill grinding influence performance, quality and quantity, in this order: (1)

(Turn to FEED MILLS, page 113)

WASHINGTON OFFICERS—New officers were named and the retiring president was presented with a plaque in recognition of his services when the Washington State Feed Assn. held its annual meeting in Yakima recently. In the above photo, Robert Murphy (second from left), Murphy Feed & Seed, Arlington, the retiring president, and some of the new officers and the convention chairman look over the plaque. On the left is Walter Van Horne, J. W. Feed Co., Burlington, the new secretary-treasurer. Third and fourth from the left are Russell Wriglesworth, General Mills, Inc., Seattle, the new president, and Walter Krumbholz, Leo Cook Co., Spokane, the 1958 convention committee chairman.

Russ Wriglesworth Heads Washington Feed Association

YAKIMA, WASH. — Russell Wriglesworth, General Mills, Inc., Seattle, is the new president of the Washington State Feed Assn.

Announcement of the election of Mr. Wriglesworth and other officers was made at the association's annual convention, Feb. 13-14, at the Chinook Hotel in Yakima.

Mr. Wriglesworth, who moves up from vice president, succeeds Robert Murphy, Murphy Feed & Seed, Arlington. In recognition of his services, Mr. Murphy was presented with a plaque by Walter Krumbholz, Leo Cook Co., Spokane, convention chairman.

Floyd Svinth, Montesano (Wash.) Feed & Seed, was named vice president after serving the past year as secretary-treasurer. Walter Van Horne, J. W. Feed Co., Burlington, became secretary-treasurer. John Wilson of Seattle is association manager.

A. J. McFarlane, Fisher Flouring Mills Co., Seattle, was reelected governor at large, and Robert Waters, Chas. R. Waters Co., Bothell, was reelected governor for King-Snohomish Counties.

It was decided that the 1959 convention will be held Feb. 12-13 at the Leopold Hotel in Bellingham.

Some 300 persons were on hand for the convention and feed mill production school (see accompanying story).

Fryer Commission

As part of the convention program, Rex Parsons, manager of the Washington Fryer Commission, described the "importance of the commission to the feed industry." He called it a self-help plan among growers, financed by an amount of .17¢ per pound of broiler marketed. Mr. Parsons urged support of the commission in its efforts in promotion of Washington fryers; research; labeling, standards and grades; and investigation of unfair trade practices. He noted that it is now required that broilers sold in Washington be labeled as to point of origin, and he said he believed that freshness of local poultry was worth promoting.

Mr. Parsons said the commission program seeks a more stable and profitable fryer industry at all levels, and he said feed men should encourage a quality product produced by good growers, with avoidance of loose growth of the industry.

Edward McMillan, National Bank of Commerce, Seattle, discussed the current and prospective general economic situation, noting the current recession. He expects the current situation to be a "modest dip" in an over-all climb in the economy, but the dip is deeper than those in 1949 and 1953. He also warned that there still can be another round of inflation. Meanwhile, built-in stabilizers will help hold the current business downturn to a relatively modest decline.

Other convention speakers included U.S. Sen. Henry Jackson of Washington, Charles Embree of Whitworth College and Dave Livingston, entertaining farm speaker from Iowa. Bill Muncey, famous hydroplane pilot from Seattle, was luncheon speaker.

New Mill Opens

IDA GROVE, IOWA — The new $350,000 Consumer Cooperative Assn. feed mill here will be running at full capacity by the end of February. Based on an eight-hour shift per day, full production is 24,000 tons a year.

It is designed to supply the complete line of "Co-op Open Formula Feeds" in bag and bulk to local cooperatives within about a 50-mile radius of Ida Grove.

J. R. Le Gendre

JOINS H. V. NOOTBAAR—A new technical sales advisor for the H. V. Nootbaar Co., Pasadena, Cal., is J. R. Le Gendre. Mr. Le Gendre studied business administration at Louisiana Polytechnic Institute, Ruston, La., and continued these studies at Centenary College of Louisiana at Shreveport. He received his bachelor's degree in animal husbandry at Texas Technological College, Lubbock, and his masters' degree in animal nutrition at Oklahoma State University. He has been studying and serving as a graduate assistant on a research assistanceship grant since 1957 at Oklahoma State University.

Quaker Oats Reports Increased Net Sales

CHICAGO—The Quaker Oats Co., Chicago, reports that for the six months which ended Dec. 31, 1957, net sales increased to $156,246,026 from $155,176,259 for the corresponding 1956 period.

Net income for the period was $8,096,848. For the same period of 1956 it was $7,122,601.

According to Donold B. Lourie, president, the net income for the six months amounted to $2.05 per share of common stock as compared with $1.79 per share for the same period of the previous year, based on the number of shares now outstanding.

He said that since October, 1956, a dividend of 45¢ per share has been paid each quarter, and that on Nov. 20, 1957, a 10% stock dividend was paid. "On Jan. 20, 1958, a dividend of 45¢ was paid on the increased shares, so in effect the dividend has been increased by 10% because of the stock dividend," he explained.

"Historically, our first six months' earnings are better than the second six months of our fiscal year. This will probably be true again this year. Rising costs continue to squeeze our margins. However, our volume continues to hold up well, and we are optimistic about the remainder of the fiscal year," the president stated.

Cattle Prices Rise In Southern States

MACON, GA.—Prices of cattle and calves were higher recently in the southeastern states.

In Florida, although bad weather has made grazing conditions extremely poor, restricting buying of stocker cattle, slaughter buyers took up the slack, causing prices for both cattle and calves to rise as much as a dollar or more.

Generally, the level of prices throughout the South was about the highest in five years.

At Georgia auctions, utility to low-standard steers and heifers sold from $16.50-$20. Utility cows brought from $16.25-$18 and canners and cutters sold at from $12-16.50. Utility and commercial bulls ranged from $18.50-20 30.

For information or a quotation on *Myvamix Vitamin E Feed Supplement*, write ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York, Chicago, and Memphis • Charles Albert Smith Limited, Montreal and Toronto • Or, contact the distributor nearest you.

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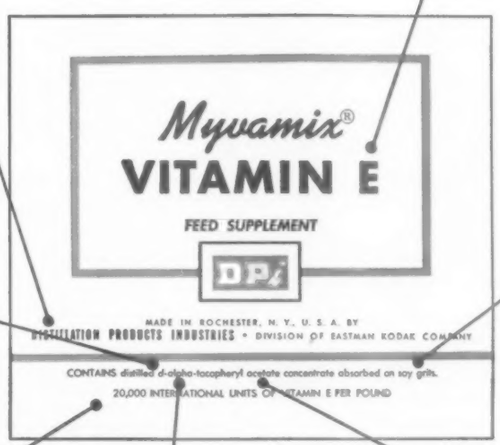
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Livestock Feed Developments Discussed at Montana Event

By ROGER S. BERGLUND
Feedstuffs Managing Editor

BOZEMAN, MONT. — It appears that the region across the northwestern part of the country will become more and more important as a livestock feeding area, and it was in this general atmosphere that the 1958 Montana Nutrition Conference was held Feb. 10-11 at Montana State College.

Some of the developments which have potentially widespread effects on livestock and poultry production in the area came in for attention, and other speakers touched on opportunities for more cattle feeding, for example, as opposed to primary emphasis on range cattle operations.

Cutbacks in wheat production and increased barley production have been major factors in the growing interest in ways to use surplus feed grain supplies available in Montana and neighboring states.

One of the conference speakers, Dr. James McGinnis of Washington State College, told of studies on improvement in the feed value of barley for poultry by enzyme supplement and water treatment. Dr. McGinnis foresees broad application of the principle of enzyme use to improve feedstuffs, and commercial availability of new enzyme supplements may be expected soon. (See story in next week's Feedstuffs.)

Meanwhile, a continuing increase in livestock feeding operations in barley-producing areas of the Northwest is expected.

More Fattening?

In welcoming the feed men at the conference, J. A. Asleson, assistant director of the Montana Agricultural Experiment Station, pointed to the possibilities. He noted that Montana has a feed surplus and asked whether it should get greater use in the state. The state is now shipping cattle out for fattening. Perhaps, he said, more fattening should be done right in the state. He said that the college will investigate livestock nutrition further.

Not discussed specifically but brought out in some of the discussions were such things as the expected increased use of complete pelleted roughage-concentrate rations for ruminants and the expected increased use of barley for feeding hogs in surplus grain areas of the Northwest.

One of the developments that would encourage more livestock feeding operations would be establishment of more meat packing facilities in Montana and adjacent areas, with meat rather than live animals then being shipped out.

In this connection, Jerry Sotola, Armour's Livestock Bureau, Chicago, mentioned in a banquet address some of the future developments to be expected.

"Big packing plants are being closed," he said. "The plants will be located in the center of livestock production.

"For one thing, the railroad is giving way to the truck.

"Also, feed men will play a role as never before. Armour is signing contracts involving feed companies and producers for livestock management conditions, etc. Contract farming is coming, and other producers will be dropping out."

Nearly 150 persons were on hand for the conference, which found guest speakers and Montana State scientists discussing various aspects of animal and poultry nutrition. A good share of the program dealt with range and feedlot livestock feeding and management. There also were talks on dairy calf nutrition, poultry research and topics of general interest to the feed industry.

Dr. O. O. Thomas, Montana State animal nutritionist, was chairman of the event, which drew a large share of the feed men from the big state of Montana.

Summaries of conference talks follow:

CURRENT TRENDS IN CALF NUTRITION—Dr. N. L. Jacobson, Iowa State College, Ames: In the use of milk replacers, the addition of fat to replacers has become increasingly popular in order to get energy high enough. A level of at least 10% fat in the dry replacer seems desirable.

Starch is not well utilized posterior to the rumen by the young calf and causes diarrhea. Feeds high in starch should be used sparingly or omitted from milk replacers since liquid feeds usually bypass the rumen. The reason for poor utilization of starch is not clear. Current studies on enzyme systems and other aspects of digestion may help clarify this.

Recently there have been encouraging reports of substitution of dry replacer for liquid replacer at a very early age. More work is needed, but if liquid feeds could be omitted entirely after two or three weeks of age, calf feeding could be simplified. North Carolina State College has reported on use of dry replacers, fed in pellet form, at 10 days to two weeks, with encouraging results.

A calf starter should be fairly high in protein (at least 16%), low in fiber and palatable. A mixture coarse in texture and free from dust is preferable. Palatability is helped by 10% molasses. In some cases, palatability can be improved by pelleting.

In some systems, hay is ground and combined with concentrates (starter) in pellet form. This will make hay consumption more uniform, and if hay is added at a high level, consumption is increased substantially. Hay-concentrate pellets may have certain advantages. The Ohio station has tried a 2-to-1 ratio in pellets. Such pellets may work in certain areas better than others. If they are not too high in roughage so that the animals get enough TDN, they may be all right. In some places concentrate TDN is about as cheap as roughage.

Enzyme feeding has not been tested very extensively with calves, but results so far have not been encouraging. However, it is possible that utilization of some dietary combinations not yet examined might be improved. The fact that animals can't handle certain feeds is significant in possible use of enzymes.

Addition of antibiotics to calf feeds has become common, particularly in milk replacers and starters. In replacers the usual level is about 20 mg. per pound and in starters 10 mg. per pound, although some research has indicated variations from this. Aureomycin and Terramycin have been studied most widely and have shown the greatest promise in calf feeding.

A good growth response has been obtained from 3-nitro; in other work results have not been quite so consistent.

In most areas, whole milk can't be used economically as the primary feed for veal calves. More economical rations are needed. There are indications that other feed combinations can be employed successfully. Among ingredients now being tested are skim milk, whey, distillers solubles, fat.

A COMPARISON OF TWO LEVELS OF GRAIN FEEDING OF DAIRY CATTLE ON PASTURE—Dr. E. P. Smith, Montana State College: It is possible that when cows are on good pasture, they can be fed a lower than usual level of grain and obtain more of their required nutrients from pasture. An experiment was conducted in which one group of cows on pasture received 2 lb. of grain daily; a second group was fed according to production at a rate of 1 lb. daily for every 3 lb. of fat corrected milk above 20 lb. If a cow produced less than 20 lb., she was fed 2 lb. of grain to help get her into the milking barn.

There were no significant differences in amount of milk produced or gain in body weights between the two levels of feeding. Cows fed 2 lb. of grain per day consumed 1,794 more pounds of T.D.N. from pasture than did cows of the second group during the 84-day trial. There were no significant differences in milk production by cows of either group for the

(Turn to MONTANA, page 114)

FEED CLUB—At the next meeting of the Columbus Feed Club March 3, at the Southern Hotel in Columbus, Ohio, members will hear a talk on wild game in central Ohio. The speaker will be Don Mack, who conducts a Columbus television program, "Outdoors with Don Mack." The club is also planning its 11th annual Youth Night for April 7. At this meeting children of members are club guests at the Ft. Hayes Hotel in Columbus. Pictured are officers of the club. Standing left to right are Jack Winters, J. I. Gates Milling Co., director; Curtis Kuntz, Grove City Farmers Exchange, director, and Henry E. Pruyn, National Distillers Products Co., director. Seated left to right are: C. C. Welch, New England Byproducts Co., secretary; Paul M. Steckman, Diamond Crystal Salt Co., chairman, and John E. Wiant, the Ohio Grain Co., co-chairman. Other officers are Earnest V. Roush, Ostrander Farmers Exchange Co., treasurer; Harry Shrode, J-M Trading Co., director, and L. S. Walton, Ohio Farm Bureau, director.

Hatch of Broiler Chicks Continues Ahead of Year Ago

WASHINGTON—The demand for broiler-type chicks has continued strong, and continuing increases in the hatch as compared with a year earlier are reported by the U.S. Department of Agriculture.

USDA's latest hatchery report shows that the number of broiler-type chicks hatched in January was 137.8 million—11% more than a year earlier.

The number of broiler-type eggs in incubators on Feb. 1 was 11% more than on Feb. 1, 1957—indicating another significant increase in the size of the hatch in February.

All regions show increases in numbers of eggs in incubators on Feb. 1 as compared with a year earlier. The largest increases are 12% in New England, 24% in the middle Atlantic states, 19% in the east north central region, 13% in the south Atlantic states and 12% in the east south central states. The Pacific Coast shows the smallest increase, only 1%.

Mrs. W. J. Westerman Dies at Mobile, Ala.

MOBILE, ALA.—Mrs. William J. Westerman died unexpectedly at her home in Mobile, Ala., Feb. 17. Funeral services were held in St. Louis. Her husband, William J. Westerman, is vice president of Southern Industries Corp., Mobile.

Mastitis Workshop Set For Chicago Feb. 27-28

CHICAGO — A workshop dealing with bovine mastitis as it affects the dairy farmer, the veterinarian, the dairy industry and the consumer will be sponsored Feb. 27-28 at the Edgewater Beach Hotel here by Jensen-Salsbery Laboratories, Inc., Kansas City.

The latest control measures will be reported and discussed by dairy industry leaders, researchers and veterinarians in an effort to spotlight the best general procedure of benefit to all concerned.

A workshop round table will be moderated Feb. 28 by Dr. A. H. Quin, Jensen-Salsbery vice president. Speakers and their topics on Feb. 27 are: Dr. Roy Nichols, University of Wisconsin, "Predisposing Factors in Mastitis"; Dr. Roland Anderson, Elkhorn, Wis., "The Mastitis Problem We Face Today"; Dr. John Herrick, Iowa State College, "A Practical Mastitis Control Program"; and N. J. Post, National Milk Producers Federation, "The Red Ink on the Dairy Farmer's Balance Sheet."

Among the speakers Feb. 28 will be Dr. C. W. Burch, University of Wisconsin, "Mastitis Control in Wisconsin"; Dr. A. Kelman, Waterloo, Wis., "The Practicing Veterinarian and Mastitis Prevention"; and Dr. C. M. Cooper, Jensen-Salsbery, "The Pharmaceutical Industry and Mastitis Control."

Georgia Broiler Sales Reported Increasing

ATLANTA—The reported sale of Georgia-grown broilers and fryers was 17,325,000 for the four-week period ending Jan. 25, the Georgia Department of Agriculture announced. This represents an increase of 3.59% over the previous four weeks.

Weighted average prices paid for broilers and fryers in north Georgia were 18.9¢ at the farm and 19.95¢ at the plant.

For the corresponding period last year, the sales were reported at 17,709,877 with an average price in north Georgia of 16.72¢ at the farm and 17.71¢ at the plant.

Researchers Report Latest Findings at Oregon Meeting

By R. H. BIRDSALL
Oregon State College

CORVALLIS, ORE.—Further benefits from stilbestrol feeding of beef cattle, nutritional use of tranquilizers for sheep and cattle and possibilities of "leveling" annual milk production of dairy cattle through better winter feeding programs were highlights of the Oregon Animal Industry Conference.

Nearly 200 feed men, industry representatives and research workers attended the 16th annual two-day conference at Oregon State College Feb. 6-7.

The conference is sponsored by OSC and the Oregon Feed & Seed Dealers Assn. Program planners this year were Fred C. West, Portland, representing the association, and Dr. James Oldfield, OSC animal nutritionist.

Other key talks dealt with nutritional requirements of turkey breeder hens, use of barley for broiler chicks and layers and supplementing roughages to meet nutritional requirements of cattle and sheep.

Stilbestrol Rate Doubled

Doubling the rate of stilbestrol in a fattening ration for yearling cattle during the last two months of feeding gave marked improvement in beef carcasses, reported Dr. Wise Burroughs, department of animal husbandry, Iowa State College. He added that faster rate of gain and lower feed costs for gains more than paid for the extra stilbestrol. The higher rate has not yet been cleared by the Food & Drug Administration.

Tests were conducted with cattle on a typical Iowa fattening ration plus 10 mg. of stilbestrol daily for 146 days. During the last two months, the stilbestrol rate was doubled to 20 mg. for one group of animals.

Cattle on the higher stilbestrol rate graded an average of a sixth of a grade above animals on the lower rate. The one sixth of a grade on today's market means about $6 more per steer, Dr. Burroughs pointed out.

In addition to grading higher, the cattle receiving 20 mg. the last two months gained 11 lb. per steer more than those on 10 mg. over the full 146-day feed period.

Dr. Burroughs said the experiment further suggests the probable reason why cattle implanted with stilbestrol at the start of a feeding period have, on the average, failed to grade quite as high as stilbestrol-fed cattle. With implantation it is impossible for cattle to receive additional stilbestrol as body weight increases, he said.

Improved Carcass Grade

Dr. Burroughs reported another test indicating that stilbestrol improves carcass grade, along with rate of gain and feed efficiency, when fattening rations are selected with a high calorie-to-protein ratio.

He also discussed nutrient requirements of rumen microorganisms to increase their efficiency in digestion of cellulose, the main component of roughage feeds.

"When cellulose in roughages is the primary energy source for cattle or sheep, some soluble carbohydrate must be present in the ration for maximum cellulose digestion," Dr. Burroughs explained.

It is necessary to supplement low-quality roughages with sugars or starches, such as those found in molasses, grains and other concentrate feeds, to meet nutrient requirements of rumen microorganisms. Dr. Burroughs said such supplements appear highly effective in increasing cellulose utilization when fed at rates of 5-10% of the total ration.

It also appears that rations should contain about 10% protein for maximum utilization of roughage. The researcher said this can be supplied by feed proteins or combinations of feed protein and non-protein nitrogen such as urea.

Where cattle receive a ration consisting primarily of roughages the phosphorus requirement for good rumen function appears to be about 0.20% in the total air-dry ration. Most roughages contain adequate supplies of potassium, and sodium can easily be supplied by feeding of salt.

Emphasizing the importance of "feeding" rumen bacteria, Dr. Burroughs said it is possible to supplement corncobs and obtain as good or better cattle gains than are obtained from good quality legume hay.

"Other attempts to improve utilization of cellulose include experimental X-ray treatment to alter the physical state of cellulose. Attempts to 'seed' the rumen with various dry rumen inoculums have so far been ineffective," the scientist stated.

Fine-grinding and pelleting of roughages have resulted in greater feed consumption and faster gains, but Dr. Burroughs said more study is needed to learn if improved performance of cattle will pay the added cost.

Tranquilizers

Dr. D. C. Church, OSC department of animal husbandry, reported recent research trials in which tranquilizers at low levels appear to improve daily gain and feed efficiency of ruminants.

In 65-day lamb fattening trials at the college, the tranquilizer hydroxyzine improved daily gains 8% over controls and feed efficiency 4% over controls. Lambs were on a high-roughage pelleted ration.

While pointing out that the OSC trials did not give sufficient gain improvement among all animals to make accurate predictions, Dr. Church added that trials by Chas. Pfizer & Co., Inc., have shown considerably higher percentage gain increases and better feed efficiency for both sheep and cattle. In both the Pfizer and OSC lamb trials there was an indication of improvement in lamb carcass grade.

"Winter milk slump in dairy cows may often be tied directly to a shortage of total digestible nutrients rather than 'seasonal' falling off of animals," stated Dr. A. O. Shaw, Washington State College dairy science department chairman.

Dr. Shaw reported a recent Washington study to determine the wide variation between low milk production in winter months and high-level production during good pasture season. He called attention to the problems of milk marketing as a result of this wide variation.

Two-year-old, 1,100-lb. heifers in Washington State College tests received an average TDN intake from pasture ranging from 12.9-13.6 lb. daily. Assuming that they were fed 6.1 lb. of grain, as is the average cow, they would have received from 17.4-18.1 lb. of TDN. This is enough to support production of 31 lb. of 4% milk.

"January feed of 5 lb. of hay and 40 lb. of silage would give these heifers 11.5 lb. of TDN daily," Dr. Shaw explained. "An added 6 lb. of grain (4.5 lb. of TDN) would boost the total to 16 lb. of TDN. This is enough to support production of 27 lb. of 4% milk."

Dr. Shaw stated, however, that quality of roughage on most western Washington farms is not good enough that 1,100-lb. heifers would eat amounts needed to maintain such winter milk production. He said the study will continue, but from preliminary findings he believes the winter fall-off is largely a feeding problem.

Barley Feeding

"Poultry nutrition studies at OSC show that barley may replace up to one half the ground corn in all-mash feeds for broiler chicks," reported Dr. George Arscott, OSC poultry researcher. He said the barley-corn combination, plus 3% fat, gave results at least comparable to an all-corn ration containing no added fat. Wheat, on the other hand, may completely replace corn with almost comparable results.

The tests also showed that addition of 3-6% fat to all-corn rations results in further improvement in feed conversion.

"In pelleted feeds for broilers, barley may replace up to one half the ground corn with results comparable to an all-corn mash ration containing no added fat," Dr. Arscott reported. An all-barley pellet containing 3% added fat resulted in wet litter.

Water consumption was increased markedly in pelleted feeds and feeds containing barley. Soaking barley used in broiler rations improved

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DATES, SITE SET FOR GFDNA CONVENTION

WASHINGTON—Dates have been set for the 62nd convention and annual meeting of the Grain & Feed Dealers National Assn. It will be held Sept. 7-9 at the Sheraton-Jefferson Hotel in St. Louis. The general meetings will be preceded by a conference of the Secretaries' Circle Sept. 6-7. The announcement was made by Alvin E. Oliver, executive vice president.

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Feeds Sales Management Problems Probed by Experts in Industry Clinic

CHICAGO—Close to 60 executives, representing 45 feed manufacturing firms from 16 states, gathered at the Moraine Hotel in Highland Park, Ill., for a sales management clinic recently.

Called something unique in feed industry meetings, the program was described by Vernon Dawe, vice president of Dawe's Laboratories, Inc., sponsor of the clinic, as an opportunity to learn and exchange ideas, methods and principles in the sales and marketing phase of the feed industry to benefit over-all sales performance.

Frank McBride, advertising manager of Dawe's, largely responsible for putting the program together, observed that the industry has its production schools and nutrition seminars which contribute to better methods of manufacture and improved feeds and feeding practices. He said he hopes and believes the study of sales management and sales techniques will make as important a contribution to the betterment of the industry.

Following a reception the evening of Feb. 9, the delegates settled down the morning of Feb. 10 for three days of attention to sales. Experts were present to analyze all phases of sales as related to the feed industry.

Addresses were given during the morning sessions by experts in sales management, and two afternoons were devoted to round table discussions on problems of sales management.

New Concepts

The sales manager and salesmen of today were recognized at the outset as something different from those of the past. Speaking on new concepts in sales department management, R. D. Emmons, general sales manager for Wirthmore Feeds, Inc., Boston, said, "This fellow we are talking about still has to be a leader, but the practice of being a cheerleader is a thing of the past."

He said the sales manager must keep in touch with his territories yet spend more time at his desk. He has to know the functions of other departments. He must remember that his success depends on the success of his department as a whole. He must look for outside assistance from market surveys and must do a better job of communications. Finally, he must remember that the customer is the key to all doors.

Mr. Emmons pointed out, however, that the sales manager is little better than other members of his department, such as assistant sales managers.

The sales supervisor is the sales manager on his level, and should be given the opportunity to act as such. Speaking of the salesmen, Mr. Emmons said they are better educated than their counterparts of the past and have a better knowledge of farm economics and farm management practices.

"The days of the 'hail fellow, well met' or 'personality kid' are a thing of the past," he said.

How to Get Salesmen

The problem of how to get well-qualified and capable salesmen was discussed by Simon Heemstra, director of advertising and promotion for McMillen Feed Mills, Ft. Wayne, Ind.

Asking the question, "How important is this matter of recruiting and selecting salesmen?" Mr. Heemstra said it is vital for three reasons. First, it is important because the salesman is a vital factor in the business economy. Second, because a firm is committing itself to a sizable investment. The third factor is the cost of recruiting and hiring good salesmen.

Looking at the amount of investment represented by a new salesman, Mr. Heemstra said a young salesman 25 to 35 years old represents an investment of $300,000 to $400,000 or more over the 30 to 35 years he is productive.

He said a recent study by the American Management Assn. reveals that the cost of hiring, training and losing an ineffective salesman was $6,594.

In seeking better methods for McMillen Feed Mills, Mr. Heemstra said the firm was guided by two factors: (1) Determining the kind of man wanted, and (2) selecting the man who qualifies.

Must Be Informed

"Productive feed salesmen today must be better informed with technical know-how and they must be more skilled in merchandising and sales techniques," he said.

Describing the McMillen policy in recruiting salesmen, he said the best source for finding desirable applicants is the firm's own salesmen and other company employees. Almost 40% of their new salesmen are found this way. Another 27% come from colleges and universities. Private employment agencies and the state employment service yield another 16%, and the balance come to the firm through ads, showing up at the company offices or referral to the firm by dealers, businessmen or stockholders.

Communications

Dr. Robert W. English, director of education for the American Institute of Baking, Chicago, spoke on the problem of communications in management.

"Management's task consists of getting things done through people," he said. "Production of physical goods has advanced in its methods since 1900 far more than the arts involved in human relations, including sales and marketing techniques and the problems of sales management."

Must Be Understood

People talking to people (orally or in writing, directly, or through mechanical devices) are not communicating unless they are understood, he said. To achieve a transfer of understanding, one must listen. Communication with people requires reception of the message as well as transmission, he pointed out.

"It is my opinion that the most common barrier to successful communication is the assumption on the part of the 'sender' that the 'receiver' is understanding what he means as he means it," Dr. English said. "Haven't we all been guilty of giving instructions to people who were working under our direction and made no effort to determine whether we were understood?"

He said wise choice of words, effective listening and checking to see if a message is understood all are also helped if the "climate"—the situations surrounding the act of communicating—is conducive to good communicating.

Training

Dr. English also spoke on modern sales training techniques. He pointed out first that schooling and education are not the same. A man's education, he said, is what he has learned in the totality of his experience. He is a part of all that he has met. All that an individual knows is but a foundation on which to build.

He used this approach, he said, to point out that improvement of a salesman must come from within the salesman. He must grow in stature by himself. He can't be built.

"To be effective in helping men learn," he said, "we must find out what they do know and help them grow from there. One of the primary reasons that some of your best salesmen are poor supervisors is because they have forgotten so much of what their learner needs to know that they are unable to recognize where he is."

The four steps of education, he said, are preparation, presentation, application and examination.

Credit and Financing

The group switched to a discussion of current concepts of bank credit and the financing of contract feeding by John H. Hembree, vice president and manager of the agricultural department of Union Planters National Bank, Memphis.

He traced the evolution of farming which has led to today's "farming specialist," and pointed out that facilities for processing, marketing and distributing have also changed.

"All of these various functions in farm production must be fully equipped, organized and operated efficiently," he said, "and they must be properly financed."

This growing interdependence of the different operations of "agribusiness" has caused the development of integration. He said it won't be long before farmers will produce the type, size and quality desired for a specific market.

Integration is spreading to many industries within agriculture, such as broilers, swine, cattle and others. It has made it necessary that farms expand in size to operate efficiently. These customers have a great and growing use for money.

But banks, while financing agriculture, have less and less financing direct with the consumer. Much of this has gone to the feed manufacturer.

Centers of Influence

Dr. M. Erdheim, director of technical service and development for Dawe's Laboratories, spoke on selling "centers of influence." These he defined as "individuals or groups who can influence the buying habits of groups of people."

In selling of feed, centers of influence can be outstanding producers, veterinarians, bankers, county agents and extension people, vo-ag teachers and 4-H leaders, college professors and newspaper editors.

Working with centers of influence involves the application of principles used in the public relations field. This means it is necessary to remove any causes for antagonism, assure the center of influence of the honesty and integrity of the company and its peo-

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Robert L. Eskridge

NAMED BY PURINA — Robert L. Eskridge has been named assistant advertising and promotion manager of the Ralston Purina Co.'s Ralston division, it has been announced by Geoffrey Baker, vice president in charge of the division. Mr. Eskridge joined the company in 1948 in the Chow sales promotion department. He served first as editor of the company's publication for salesmen, then as editor of the dealer publication. He was later made assistant manager of the Chow sales promotion department. In his new position, Mr. Eskridge will work with W. P. Hays, Ralston division advertising and promotion manager, in coordinating all advertising for cereals and grocery sales of Purina Dog Chow.

SUPPORT

(Continued from page 1)

also back an increase in corn acreage allotments for the 1958 crop.

Sen. Edward J. Thye (R., Minn.) has introduced a bill which would increase the 1958 corn acreage allotment from its present proposed level of 38 million acres to 56 million and retain the present support spread at 75-90% of parity. If an increased acreage allotment were provided by Congress, there would be no necessity for price support loans for noncompliers with corn acreage allotments.

There is evidence of unity among dairy groups who have been backing price supports for 1958 at 82.5% of parity and wheat interests who want $2 bu. support price. In each case Ezra Taft Benson, USDA secretary, has already ordered lower levels of support. A substantial segment of cotton producers is asking for lowered levels of price support for 1958 together with a broad expansion of acreage.

G. H. McCabe Named McCabe Co. President

MINNEAPOLIS — George H. McCabe, formerly executive vice president of the McCabe Co., Minneapolis grain and feed firm, has been elected president of the company.

He succeeds Ben C. McCabe, who will continue to be active in management of the company as chairman of the board, a new position created by the directors.

The McCabe Co. owns and operates 60 country grain elevators and three feed mills in North and South Dakota, Minnesota and Montana.

George Barrett Joins Central Bag & Burlap

CHICAGO — George F. (Mickey) Barrett, Jr., has joined the Central Bag & Burlap Co., Chicago, as a sales representative, announces E. L. Chapman, president of the firm. Mr. Barrett will serve customers mainly in the central states area.

Mr. Barrett was associated with the Chicago Feed Ingredient Co. from 1951 until his shift to Central.

McClelland Moves

KANSAS CITY—The M. A. McClelland Co. recently moved its offices in the Dwight Building. The feed ingredient firm is now located at 322 Dwight Bldg. The phone number is not changed.

Accident Takes Life

KANSAS CITY—A freak accident with a bicycle took the life of David John Schlachter, 3½-year-old-son of Mr. and Mrs. Edward Schlachter. Mr. Schlachter is with the International Milling Co. and recently was transferred to Minneapolis. His family was to move to Minneapolis next week.

While playing with a neighbor girl in the basement of their home, the young Schlachter boy got his head caught between the frame and the front wheel of a bicycle and died of strangulation. In addition to his parents, the boy is survived by his brother, Stephen, 6.

Central Soya Appoints Robert K. Weatherly

FORT WAYNE, IND.—The promotion of Robert K. Weatherly to the position of manager of the meal and oil sales department at the Chattanooga, Tenn., plant of Central Soya Co., Inc., was announced recently by B. A. Townsend, vice president.

A graduate of the University of Chattanooga, Mr. Weatherly joined Central Soya in the meal and oil sales department at Chattanooga in 1957.

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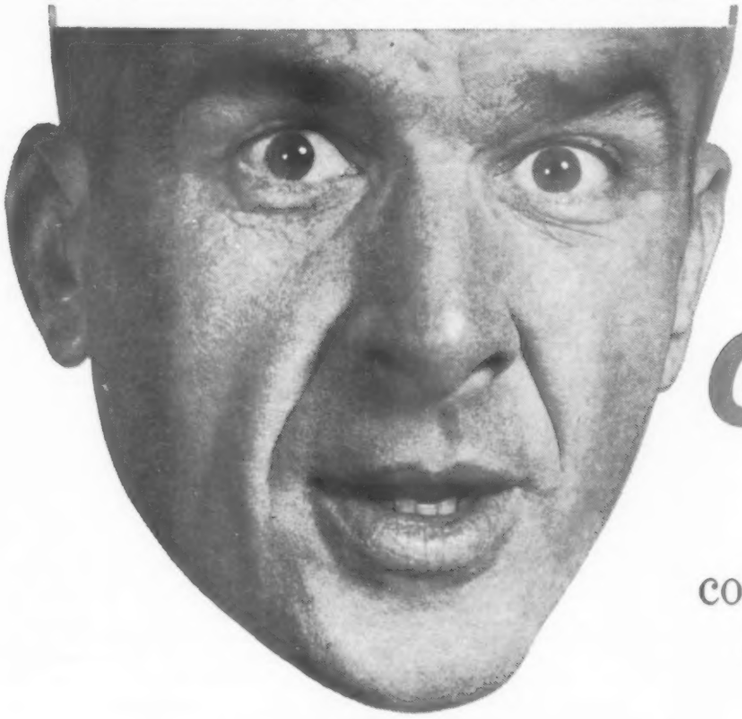

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Now—a potent, safe drug for birds of all ages— A program to test and screen other drugs to find a coccidiostat with the potency of NICARB, but without its side effects, was initiated at the Merck Research Laboratories. The result of that intensive laboratory search, rigidly tested under practical field conditions, is now available to the members of the poultry industry. That product—a proud companion to S.Q.® and NICARB—is GLYCAMIDE.

Continuing leadership in coccidiosis control—If you have used or recommended S.Q. or NICARB you already know of the Merck assurance of quality that stands behind these time-tested products. With the same assurance you may now specify GLYCAMIDE for chicks of all ages! GLYCAMIDE is the most potent drug ever developed for the prevention of coccidiosis outbreaks. It is also one of the safest drugs of its kind. Fed at recommended levels, it will not interfere with subsequent fertility, hatchability, eggshell pigmentation or internal egg quality. However, GLYCAMIDE is not currently recommended for birds in production. Merck & Co., Inc., Chemical Division, Rahway, N. J.

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Poultry Nutrition Reports at Southern Agricultural Workers Meeting

By Dr. J. R. Couch
Texas A & M College

EDITOR'S NOTE: Reports on recent poultry nutrition research were presented at the recent meeting of the Association of Southern Agricultural Workers in Little Rock, Ark. In the accompanying article, Dr. J. R. Couch of the departments of poultry science and biochemistry and nutrition at Texas A&M College reviews and comments on the various papers presented by college and industry poultry scientists. Among the topics are antibiotics in laying feeds, use of chemicals in laying feeds as a means of fly control, trace elements, antibiotics in chick diets, feather meal, improving value of grain by soaking and pelleting, effect of pullet rearing systems, laying hen nutrition and tranquilizing drugs in broiler feeds. A second article in next week's Feedstuffs will deal with nutrition reports at meetings of the animal husbandry section of the association.

There were 31 papers presented from the poultry departments of nine different colleges and universities, including Virginia Polytechnic Institute, Louisiana State University, the Texas Agricultural Experiment Station, Clemson Agricultural College, the University of Kentucky, the University of Arkansas, Mississippi State College, Alabama Polytechnic Institute, the University of Georgia and from two commercial laboratories, Chas. Pfizer & Co., Inc., and Eli Lilly & Co.

The meeting of the poultry section of the Association of Southern Agricultural Workers has developed into an excellent one which is regularly attended by feed nutritionists and ingredient suppliers, as well as college and university personnel. It was estimated that 13 papers of the 31 presented would be of interest to the feed industry and these are reviewed here.

ANTIBIOTICS IN LAYING HEN FEED FORMULATIONS: A comprehensive summary of three years' investigations on the use of antibiotics in laying hen diets was presented by Dr. E. O. Essary in the absence of the investigators, Drs. Holmes and Wisman, from Virginia Polytechnic Institute, Blacksburg. The first year's work in this regard was conducted in 1954-55 with 46 inbred Barred Plymouth Rock pullets per group. The experiment was carried out by maintaining the birds for one month on a pre-experimental basis and for three months with the addition of 20 gm. of Terramycin per ton and 200 gm. of Terramycin per ton, respectively. A summary of the data for the three months' treatment showed that egg production was increased 4 to 5% by adding the antibiotic to the feed. It was reported that fertility was increased 11%, and the hatchability of fertile eggs was increased 10% by adding the lower level of Terramycin to the feed. It has been reported previously by workers from the author's laboratory that antibiotics increase hatchability and fertility under some conditions.

The second experiment was carried out in 1955-56 with both Single Comb White Leghorn and New Hampshire pullets. The same levels of antibiotics were used as indicated above. Egg production was increased 11.8% and 16.8%, respectively, by adding the two indicated levels of antibiotic in the case of the Single Comb White Leghorns and 5 and 8%, respectively, by adding such levels to the diet of the New Hampshire pullets. Egg production and fertility were not consistently affected.

The third experiment was conducted in 1956-57 using 10 and 100 gm. of bacitracin, 7.5 gm. of bacitracin plus 2.5 gm. of penicillin, and 75 gm. of bacitracin plus 25 gm. of penicillin to groups of Single Comb White Leghorn pullets for a period of 11 months. Egg production was increased from 10 to 13% by using bacitracin or a combination of bacitracin and penicillin. The higher level of the antibiotics was not any more effective than the 10 gm. per ton level of bacitracin. The latter-mentioned figures were given for the entire 11-month treatment. Data were also presented for the latter part of the laying season, and in some instances the increase in egg production was even more dramatic when the antibiotic or combination of antibiotics was added to the feed. Fertility and hatchability were not consistently affected through the addition of antibiotics to the feed. Feed conversion was improved when the antibiotic was added to the formula.

These workers also studied the carry-over effect from the hen through the egg to the chick by feeding an antibiotic-free diet to chicks in standard battery brooders. A carry-over effect was observed in the second experiment, but not in the first and third studies. The authors concluded that the increases in egg production produced by feeding antibiotics in these studies were not statistically significant.

Comments from the audience during the discussion period brought out the fact that a 5% increase in egg production is required to pay for the addition of 100 gm. of antibiotics per ton. If egg production is increased beyond this level of 5%, then the poultryman is making a profit by using the higher lever of the antibiotics. Certainly a 10 to 20 gm. level would prove economically profitable with the increases in egg production obtained in the second and third experiments reported from the poultry department of Virginia Polytechnic Institute.

It should also be pointed out that the subject of the addition of antibiotics to laying feeds is quite a controversial one. Data from the poultry science department of the Texas Experiment Station have consistently shown that the use of an antibiotic in a laying feed formula will increase egg production and improve feed efficiency. Dr. C. W. Carlson, poultry department, South Dakota State College, has confirmed the work of the Texas station and agreed with the author on the favorable effects which may be obtained through the addition of antibiotics to the feed of laying hens. Extensive studies have been carried out on arsonic acids by Dr. Carlson and by the department of poultry science, Texas Agricultural Experiment Station, to the effect that arsonic acids will likewise produce an increase in egg production and an improvement in feed conversion.

Dr. J. R. Couch

Drs. G. A. Donovan and E. B. Patterson, Chas. Pfizer & Co., Inc., Terre Haute, Ind., presented a paper concerning the use of oxytetracycline and a fermentation source of unidentified growth factors in the laying hen diet and the effect of same on egg shell quality. The oxytetracycline was fed at levels of 50 and 100 gm. per ton and the 50 gm. per ton level was also fed with 0.45% of the fermentation source. Oxytetracycline at the 100 gm. level was included in one experiment in an intermittent feeding procedure. Best egg shell quality, as measured by the shell breaking strength, was obtained when the oxytetracycline and

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the fermentation product were fed in combination. The oxytetracycline alone improved the egg shell quality when fed continuously, but was not effective when fed on an intermittent basis.

The improvement of egg shall quality through the addition of an antibiotic to the laying mash formula is simply another reason for adding antibiotics to laying mash feed formulas.

The accepted antibiotics for use in poultry feeds are bacitracin, penicillin, Aureomycin, Terramycin and Streptomycin. The author has been an advocate of the use of combinations of antibiotics for a number of years. The feed nutritionist may use the antibiotics of choice in making up such a combination. It is also the opinion of the author that the level of antibiotics used in laying feeds should be in the range of 20 to 25 gm. per ton.

USE OF CHEMICALS IN LAYING FEEDS AS A MEANS OF FLY CONTROL — PARTICULARLY CAGED LAYERS: Dr. J. H. Quisenberry, head of the poultry science department, Texas A&M College System, introduced a new concept with regard to the fly control problem in caged layer operations at this meeting. Fly control is a universal problem in most of the caged layer operations in the country, and at certain seasons of the year it may be a real problem in other types of poultry businesses, as well as on livestock farms. The present methods of controlling flies in droppings from poultry and other animals are rarely completely satisfactory and are quite costly. The addition of an effective larvacide to the feed formula, which would not be toxic to the animal, offers a great deal of promise as a satisfactory method of controlling flies.

Dr. Quisenberry presented data from two preliminary trials which were conducted by feeding two different chemicals to hens in laying cages during the summer of 1957. The two products used were Trolene (ET 57, supplied by Dow Chemical Co., Freeport, Texas) and Polybor 3 (disodium octaborate tetrahydrate— $Na_2B_8O_{13} \cdot 4H_2O$). The Trolene was not effective to any degree in controlling the flies when fed at levels as high as the investigators considered to be economically feasible.

Polybor 3 was fed at ½, 1, 1½ and 3 lb. per ton of laying feed. Preliminary results showed that 6 lb. of Polybor 3 was adequate for satisfactory fly control. Tests currently in progress indicate that the 3 lb per ton level may also be adequate.

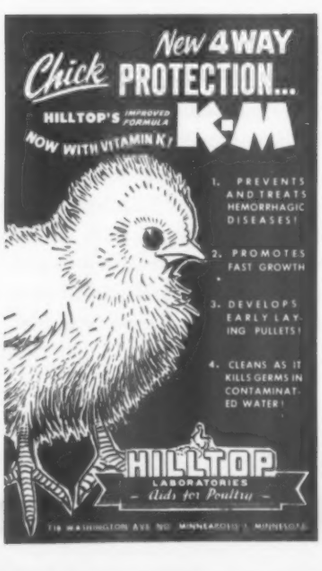
There is, of course, always the potential danger of the effects of the boron in Polybor 3 on plants if the droppings are used indiscriminantly for fertilizer. Such danger is minimal with these low levels of Polybor 3. Data are needed with regard to the use of droppings of caged layers fed different levels of Polybor 3 as fertilizer.

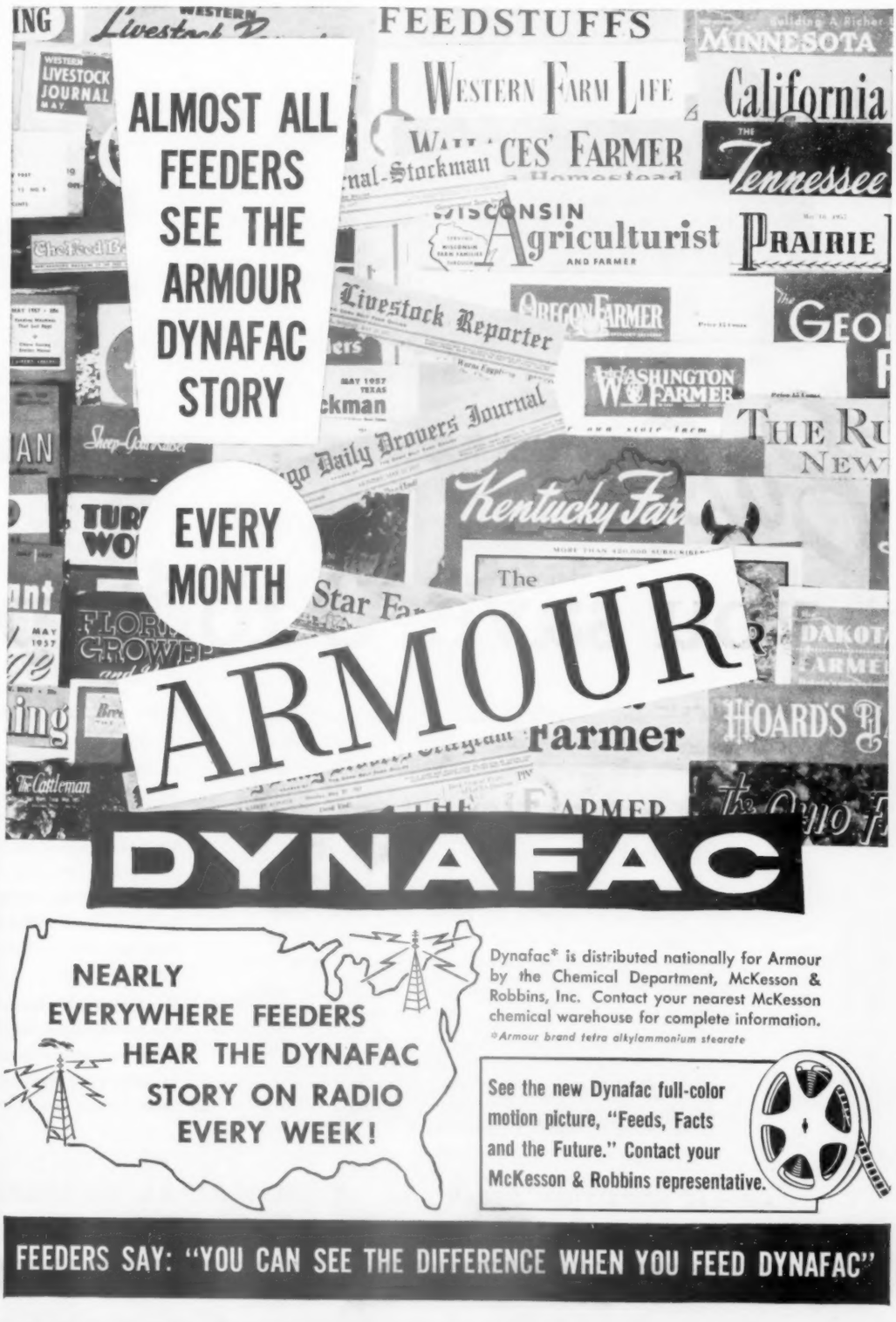
Much more testing needs to be done. These preliminary results presented by Dr. Quisenberry and his co-workers suggest that the new method of fly control in caged layer operations has a great deal of promise. No doubt, there are other chemicals which may be quite effective as larvacides which are cheaper in price and which can be tolerated by the birds with no harmful effects or residual effects in the eggs and tissues of the birds. Chemical manufacturers should immediately be encouraged to check over possible larvacides in chemical stocks, and also to consider the synthesis and manufacture of other larvacides for use in fly control through adding such chemicals to caged layer feed formulas. This should increase not only the sales for the chemical manufacturers, but also increase the returns to caged layer operators through savings in present fly control procedures, as well as decreasing the actual cost of chemicals used. Polybor 3 sells for 15¢ lb. which would make a total of 45¢ per ton added to the cost of a caged layer feed if a 3 lb. per ton level of Polybor 3 was used.

It should be emphasized that residual studies with regard to the deposit of boron in the tissues and eggs from the birds have not been carried out. Such studies would certainly be necessary before Polybor 3 could be used indiscriminately in caged layer operations. It would also be important to determine whether the level of Polybor 3 which will control flies when used as a larvacide will be toxic to plants if the droppings are used as fertilizer. It is predicted that there will be a great deal of activity in forthcoming months.

TRACE ELEMENTS IN POULTRY NUTRITION: The importance of trace elements in poultry nutrition was reviewed by the author. The essential trace elements considered to be required by the chicken and turkey are iron, copper, zinc, manganese, iodine, cobalt, molybdenum and perhaps selenium. Copper and iron are necessary for the formation of hemoglobin, the oxygen component of the blood. It has generally been assumed that poultry feed formulas contain sufficient quantities of iron and copper to meet the requirements of the chicken and turkey. Additional research is needed in this regard. Cobalt is an integral part of the vitamin B_{12} molecule, and it is not necessary to add cobalt to the diet when an adequate amount of vitamin B_{12} is included in the formula. Manganese is necessary for the prevention of perosis, for growth, egg production, for the maintenance of egg shell quality, for embryonic development and for hatchability. This mineral may be added to the feed as the sulfate or the carbonate. The minimum level is 55 ppm. Iodine is required by the domestic fowl for the formation of thyroxin, the thyroid hormone. There are some areas

(Continued on page 14)

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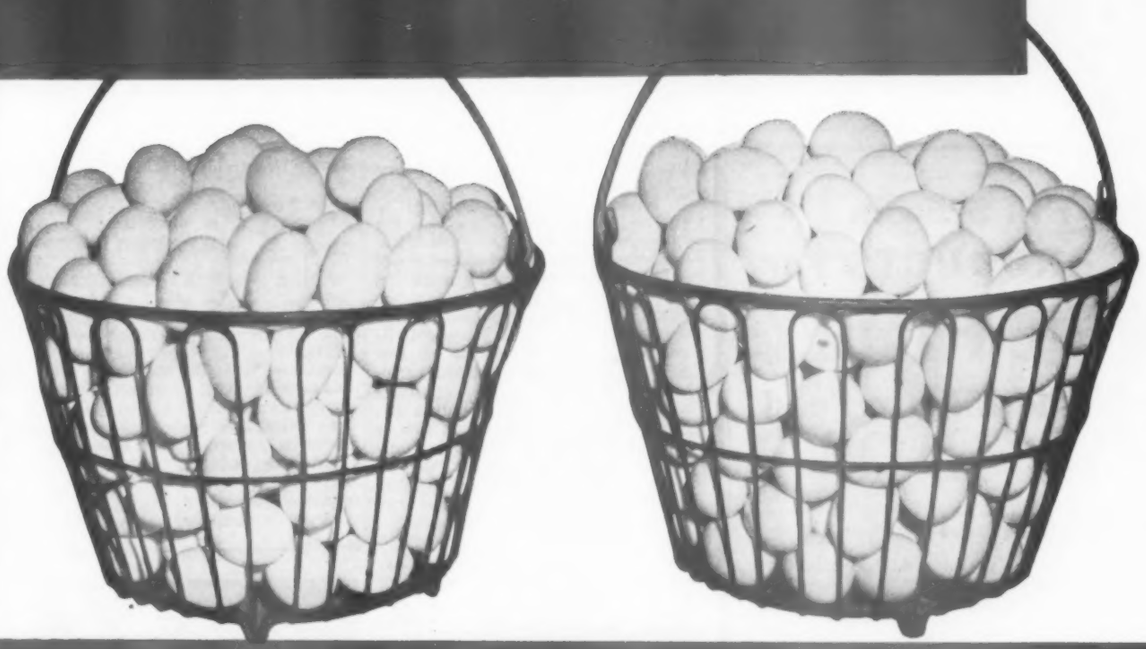

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where it is necessary to use iodine salt or a mineral mixture containing iodine in order to meet the iodine requirement.

Zinc deficiency in the chick was produced by Dr. B. L. O'Dell at the University of Missouri, and was first reported before the American Institute of Nutrition in April, 1957, Chicago, Ill. Zinc deficiency symptoms consist of decreased growth, shortened and thickened bones, perosis and poor feathering. Zinc deficiency has not been observed in the field so far as the author is aware, although a number of workers have confirmed Dr. O'Dell's observations by using specially covered battery brooders, water troughs and feed troughs in order to prevent the birds from obtaining an outside source of zinc.

Dr. Combs and co-workers, University of Maryland, reported in 1957 that zinc at a level of 50-55 ppm was effective in overcoming leg weakness in the growing turkey poult maintained on a purified diet under laboratory conditions. Dr. Combs' report leads the writer to recommend to feed manufacturers that 25-30 ppm be added to turkey feeds in the current season if there is any possibility or likelihood that leg weakness may be encountered.

Molybdenum has been found to be an essential element for chick and poult growth by Dr. Reid and the author in the department of poultry science of the Texas Agricultural Experiment Station. It has been suggested that ¼-½ gm. of sodium molybdate ($Na_2MoO_4 \cdot 2H_2O$) be added per ton of feed to meet the requirement.

Selenium was found to be a required mineral by a number of workers, including Dr. Reid and the author in 1957. Under no circumstances should selenium be added to the feed formula, since adequate quantities of the mineral are found in practical feed ingredients. Selenium is quite toxic if the tolerance level is exceeded. The requirement may appear to be 0.08-0.1 ppm. Ten ppm is quite toxic.

ANTIBIOTICS IN CHICK DIETS: A paper on the function of antibiotics in increasing growth, improving the feed conversion and improving the general well being of chickens and turkeys was presented by Dr. Bruce Glick, Mississippi State College. Dr. Glick conducted a series of experiments under varied environmental conditions. A growth increase was obtained by adding penicillin to a chick diet at a level of 50 gm. per ton either at one week of age or from day-old. Dr. Glick made differential and total blood counts, and concluded that the total white cell or leucocyte count was increased. The lymphocyte count was increased and the heterophil count was not affected by the addition of 50 gm. of penicillin per ton of finished feed.

It has generally been accepted that the function of antibiotics is one of overcoming an undetermined or undesignated disease level, and through such activity increase the growth rate, improve feed conversion, and improve the general well being of the animal. Numerous microbial counts have been carried out on intestinal contents and feces on animals fed antibiotics and similar ones not fed the drugs. Results from such studies have been inconsistent and difficult to confirm from one laboratory to another. Dr. Glick's finding that the leucocytes and lymphocytes increase with the feeding of antibiotics, and with the improvement in growth and feed efficiency is an extremely interesting one and should be investigated further in other laboratories. It is known that the white cells or leucocytes increase in the blood as an animal overcomes an infection. It would appear in this case that Dr. Glick's finding would be in part a confirmation of the fact that antibiotics act by overcoming a "disease level," although additional studies will be necessary, and it is hoped that confirmations from other laboratories will be forthcoming.

Dr. D. I. Gard, Eli Lilly & Co., Greenfield, Ind., presented data which showed that Hygromycin A and "Ilotycin" (Erythromycin) were equivalent to various penicillin salts when used at the 4 gm. per ton level with regard to increasing growth and improving feed conversion. Dr. Gard's tests were carried out under both battery and floor experimental conditions.

Mr. Bezanson and Dr. E. L. Stephenson, University of Arkansas, studied the effect of feeding four levels of antibiotics in the diet on the incidence of breast blisters in broilers using different litter materials and different depths of litter. Results obtained from these studies indicated that antibiotics had no effect on the breast blister condition in broilers. Weight was apparently a factor with regard to the occurrence of breast blisters, since a greater percentage of breast blisters was found in the heavier birds. Males also exhibited a higher incidence of breast blisters than females.

FEATHER MEAL MANUFACTURE: Mr. H. J. Eoff and Dr. E. L. Stephenson, University of Arkansas, presented a paper concerned with the feeding of two different types of feather meal to chicks. One of the feather meal samples was prepared by processing with steam and the other with dry heat. The levels of feather meal were 2½, 5, 7½ and 10%. The results from this study indicated that feather meal manufactured with steam heat produced a slightly greater growth response than that obtained by feeding the feather meal processed with dry heat. Indications from this paper were to the effect that the optimum level of feather meal to use in broiler feeds is in the range of 2½ to 3%.

All diets in this study were fed in both mash and pellet form. Pelleting the formula produced a significant growth response over the same formula in mash form in all cases.

The results of this paper confirm earlier reports that processing feather meal with steam is the best method of producing hydrolyzed feather meal for use in manufactured feeds. It is interesting to note that pelleted feed produced a significant growth response over and above that obtained by feeding the same formula in mash form.

IMPROVING THE NUTRITIVE VALUE OF GRAINS BY SOAKING AND/OR PELLETING: A great deal of interest was stimulated in 1957 through the report of Dr. McGinnis of Washington State College to the effect that the nutritive value of barley could be increased by water treatment or by the addition of enzymes to the feed formula. The water treatment produced somewhat better results than did the enzymes.

Mr. E. Jaen and Dr. E. L. Stephenson, University of Arkansas, presented a paper concerned with pelleting versus soaking as a method for improving the nutritive value of corn, milo, wheat, barley and oats for use in feeds for young chickens or turkeys. The grain used in these studies was soaked as whole grain. This is in contrast to the experiments carried out by Dr. McGinnis' group. Dr. McGinnis grinds the grain and then soaks it, whereas workers from the University of Arkansas soaked the grain, dried it and then ground it. The Arkansas workers failed to obtain an improvement in nutritive value with any of the grains tested when the grain was soaked and dried prior to being mixed in the feed formula. It cannot be concluded from this report whether it is necessary to grind the grain prior to soaking or not. Reports have come to the author to the effect that certain samples of barley failed to improve in nutritive value even when treated according to the Washington State College procedure. It is indeed possible that the Arkansas workers had such a sample of barley. Soaking

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likewise did not improve the nutritive value of milo, wheat, corn or oats.

All of the diets used in the Arkansas study were fed in both pellet and mash form. Pelleting increased the growth and improved the feed conversion in all instances whether the grain was soaked and dried prior to mixing, or not. It should be pointed out that there were two reports, one of which was discussed above, from Dr. Stephenson's laboratory, which showed rather conclusively that pelleting of a feed formula produced better results than the feeding of the formula in mash form.

EFFECT OF PULLET REARING SYSTEMS AND BREEDING ON PERFORMANCE OF COMMERCIAL EGG PRODUCING STOCK: Dr. J. H. Quisenberry presented data which showed that birds reared on range were lighter in body weight at the initiation of egg production than were similar strains reared in confinement. The range-reared birds gained weight rapidly after being housed and remained heavier than the confinement-reared birds throughout the laying season. The confinement-reared birds had a higher egg production and a better feed conversion during the early part of the laying period, whereas the range-reared birds laid at a higher rate and had a better feed conversion during the latter part of the laying period. There was no significant difference between the range-reared and the confinement-reared birds when the entire laying year was considered.

Four strains of birds were housed in laying cages and conventional floor pens. It was found that the cage-maintained birds were heavier in body weight, laid significantly larger eggs, required less feed per dozen eggs. The caged layers laid at a higher rate during the first four months of production and at a slightly lower rate during the last four months of production. It was very apparent from this report that the lighter strains of birds produced eggs more efficiently than the heavier ones.

STUDIES WITH LAYING HENS: The author presented a paper concerned with laying hen nutrition in which it was shown that laying hens apparently have a requirement for choline above that which is found in the natural ingredients of the practical laying mash. Improvements in performance were obtained with the addition of 1000 gm. of choline per ton of finished, all-mash feed. It appeared from these data that this level of choline was not adequate when high levels of fat were used.

EFFECT OF LIGHT DURING THE GROWING AND LAYING PERIOD ON EGG PRODUCTION: Professor D. F. King, head, poultry husbandry department, Alabama Polytechnic Institute, Auburn, has initiated a very interesting series of studies with the objective of determining the effect of light during the pullet growing period and during the laying period on rate of egg production. The onset of egg production can be increased or decreased by the amount of light which pullets receive during the growing period. Egg production was apparently increased by increasing the amount of light by 18 minutes per week during the laying year.

Pullets raised from day-old to five months of age on six hours of light per 24 hours maintained a high rate of lay during the laying year, when the amount of light was increased 18 minutes each week. Hens which received six hours and 18 minutes of light during the first week of lay, and had the amount of light increased by 18 minutes per week until the finish of the laying year laid 55 eggs more per hen for the year than did birds raised on 12 hours of light, and given 14 hours of light per day throughout the laying year.

It has long been known that the light intensity which the birds receive had a direct effect on the rate of egg production. This new research will no doubt be of considerable interest to feed manufacturers and further reports on these studies will be awaited.

TRANQUILIZING DRUGS IN BROILER FEEDS: Dr. W. P. Crawford, Dr. B. L. Reid and the author have conducted a series of preliminary experiments using from 25 to 250 gm. of meprobromate (Miltown) and reserpine (Rauserfia) per ton. Five experiments were conducted with different types of formulas primarily concerned with whether the formula contained unidentified growth factor sources or not.

The data from these trials indicate that the meprobromate (Miltown) exerted a stimulatory effect on growth when fed at levels ranging from 25 to 100 gm. per ton. There was no visual tranquilizing effect on the birds, even when 250 gm. per ton of either Miltown or reserpine were fed. This is a new field or research, and no doubt feed manufacturers will look forward with interest to further reports.

PRODUCE PLANT SOLD

LOUISVILLE, KY. — The Buechel Produce Exchange property has been sold for $35,000 to Mrs. Dena Taustine, wife of Hugo Taustine, Louisville Police Court Judge. Two employees who were with the exchange for more than 20 years will operate a new firm, Buechel Coal & Feed Co. They are Miss Kathryn Hite and Tyler Sweazy.

ADVERTISING WINNERS—The top poster shown above, Charles Pfizer & Co., Inc., New York, won first place in the agricultural division at the 26th annual National Competition of Outdoor Advertising Art sponsored by the Art Directors Club of Chicago. The bottom poster, Ralston Purina Co., St. Louis, won second place in the same division. Basis for judging was (1) the value of the idea to create sales or promote a cause and (2) effectiveness, excellence and ingenuity of design, composition and technique. Presentation of medals and citations will be made at an awards luncheon March 13 in Chicago. The prize-winning designs will appear in the 1957 Poster Annual to be published by Outdoor Advertising Inc., national sales organization for the medium.

CHAMPION
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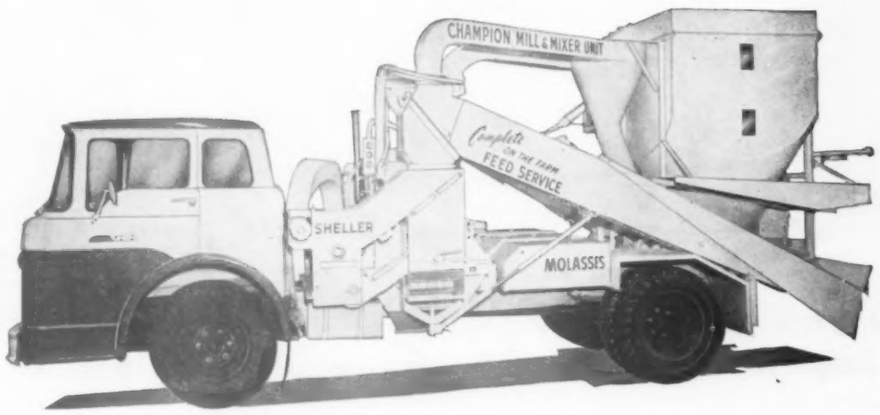

Complete ON-THE-FARM grinding and mixing feed service to increase your potential feed sales!

New sheller arrangement by CHAMPION provides a more complete ON-THE-FARM feed service. With this arrangement, ear corn and grain are fed right into the hammermill or into the sheller—without an auxiliary feeder. This is the simplest, most trouble-free, sheller arrangement ever offered to the mobile feed industry. Two tons of concentrates can be loaded on the platform between the mill and mixer unit—no need for a second truck to haul concentrates! With its big, 2 to 3 tons mixing capacity, CHAMPION will mix more feed in less time, and this capacity provides a convenient bulk delivery when necessary—another reason why CHAMPION will increase your feed sales.

EXPERIENCED PERFORMANCE AT LOW COST

Twenty-eight years of manufacturing experience brings you this fine, simple and rugged unit—the industry's greatest mobile value.

COMPLETE CHAMPION DELUXE UNIT
AS ILLUSTRATED—MOUNTED ON YOUR TRUCK

$9200.00
INCLUDING MOLASSES EQUIPMENT

$7950.00 Without Molasses Equipment

CHAMPION'S experienced performance is your assurance of TOP QUALITY AND TOP VALUE. Ask the man who knows—ask a Champion operator.

Let us help you survey the potential sales in your area.

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Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

Cattle Men Told To Expect Good Year in Canada

OTTAWA, ONT.—Present indications favor a reasonably good year for Canadian cattle men in 1958, according to Ralph K. Bennett, head of the livestock merchandising section of the Canada Department of Agriculture

He points out that there are at least 100,000 fewer head of cattle on feed in Canada than a year ago, and according to a U.S. Department of Agriculture survey, the number of cattle and calves on feed in the U.S. Jan. 1 was less than last year.

In 1957 U.S. feeders imported about 204,000 head of feeder cattle from Canada. Mr. Bennett says this was partially due to the fact that the severe drouth in the U.S. had been broken in most areas and many ranchers who would have sold cattle last fall if the drouth had continued were in the market to buy instead. He also mentioned that the U.S. has a record supply of corn and other feed grains, a situation conducive to cattle feeding, and that shipments so far this year indicate that this strong demand for Canadian feeder cattle continues.

Mr. Bennett pointed out that the production of beef cattle in Ontario is based, to a considerable extent, on the purchase of feeder cattle from western Canada. In 1957 Ontario farmers purchased approximately 85% of their feeder cattle and calves from the West. Last year Ontario marketed nearly 700,000 head at public stockyards and packing plants, which meant that feeders brought from western Canada made up about 25% of all cattle marketed in Ontario.

Cattle prices, Mr. Bennett says, are closely tied to U.S. levels. When cattle are in short supply in Canada the price level moves up, but as soon as the price at Toronto rises above the Chicago price to an amount equal to the freight and duty, U.S. cattle start to move into Canada. In other words, when beef cattle are moving in from the U.S., the U.S. price sets a ceiling above which Canadian prices do not rise.

On the other hand, when Canada has a surplus and is exporting cattle, the Canadian price tends to become the U.S. price, less the cost of shipping. This reverses the situation and the U.S. price provides a floor below which Canadian prices do not drop.

The story of cattle marketing in Canada is related to the distribution of human population and the areas where beef cattle are produced. Mr. Bennett points out that only about 27% of all Canadians live in western Canada, but the West markets nearly 65% of the cattle. This means that western Canada is a surplus area for beef and the East is a deficiency area where only 35% of the cattle are produced. The result is a continuous movement of live cattle and dressed beef from the West to the large consuming areas in the East.

The quality of beef breeding herds in Canada, he claims, has always been reasonably high, and the last 10 years the quality of animals on a carcass basis in inspected slaughter has been improved tremendously. In 1948 the number of top grade carcasses (red and blue brand beef) in inspected kill was little less than 6,000 a week, representing about 15% of the total kill. Last year the weekly average in these top grades was nearly 15,000 head, or 39% of the total kill.

A. E. Staley, III

ADVERTISING—The resignation of A. E. (Gene) Staley, III, as advertising director of the A. E. Staley Manufacturing Co., Decatur, Ill., has been announced. He will become a vice president in the Chicago office of Dancer-Fitzgerald-Sample, Inc., advertising firm. Mr. Staley is the son of A. E. Staley, Jr., president of the A. E. Staley Mfg. Co., and grandson of the company's founder. He came to the Staley company in 1952 as advertising manager in the soybean division and has been advertising director of the company for the past two years.

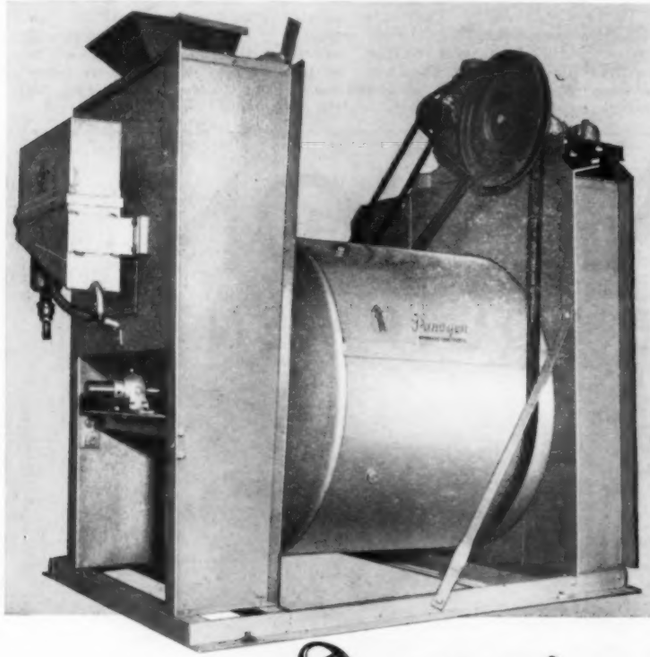
New Jersey Poultry Institutes Scheduled

NEW BRUNSWICK, N.J.—A business institute for New Jersey poultrymen will be held at three locations throughout the state beginning March 10.

The extension service of the College of Agriculture of Rutgers University announced that the meetings will be held at Lakewood on March 10, 17 and 24, at Clayton on March 12, 19 and 26 and at Somerville on March 13, 20 and 27.

Topics scheduled for each of the three evenings at each location are as follows: First evening—"How Secure Is Your Family's Future?" Second evening—"Are You Over—or Under Capitalized? Are you Overworked?" Third evening—"Efficient Marketing and Well-Used Farm Records are Keys to Success in Tomorrow's Poultry Business."

Rutgers University faculty members will be in charge of the meetings.



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INCLUDES ELECTRIC MOTOR AND BUILT-IN FAN

Now you can Panogenize 350 bushels of seed per hour for only about ½ the regular equipment cost

Here's a fully automatic PANOGEN Liquid Seed Treater at an unbelievably low price!

The new PANOGEN MODEL LC is a "push-button" Treater which offers the same dependable service as the larger Panogen Models. It treats 350 bushels per hour . . . uniformly, thoroughly, accurately.

It employs the same proven principle of tumble-mixing in a revolving drum so you are sure the seed is handled gently. It offers the same automatic clean-out of seed and a powerful built-in fan removes chaff and other extraneous material.

In short, the new MODEL LC offers you the basic features that have enabled Panogen Treaters to give year after year of efficient, trouble-free service since their introduction in 1948.

Profit from Panogenizing. With its low initial cost, dependability, and efficient performance, the new MODEL LC will help you make seed treating an even more profitable part of your business. In most cases, it should pay for itself the first season.

Satisfied Customers. And when you treat seed by the popular PANOGEN PROCESS (liquid PANOGEN applied in a PANOGEN Treater), you offer your customers the benefit of the best and most modern seed treatment . . . effective disease control, higher yields, more profit per acre.

Use the coupon to obtain more information about this unusual treater . . . and your free copy of the new 16-page booklet, *"The Benefits Of A Modern Seed Treatment"*.

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Liquid Panogen | Liquid Drinox | Panoram Fungicide | Automatic Seed Treaters | Liquid Conversion Kits | Larvacide Fumigants

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☐ Please send information on new Panogen Model LC Seed Treater

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VITAL-MIN a Pre-Mix

VITAMINS MINERALS

Made by the builders of VITAMINIZED and MINERALIZED CONCENTRATES since 1922.

Jobbers and Warehouses From Coast to Coast

THE JERSEE CO. MINNEAPOLIS MINN.

WRITE TODAY FOR DEALERS SALES HELPS!

AWARD PROGRAM — Austin W. Carpenter (left), executive director of the Eastern Federation of Feed Merchants, Inc., Sherburne, N.Y., and Lester P. Fisher (right), National Molasses Co., Oreland, Pa., have been instrumental in setting up an honor award contest for retail feed dealers in the East who undertake programs to encourage young livestock and poultry farmers.

Feed Merchants Plan Honor Award Contest In Eastern States

SHERBURNE, N.Y. — Officials of the Eastern Federation of Feed Merchants, Inc., Sherburne, have announced the second annual honor award contest for the best feed merchant program designed to encourage young livestock and poultry farmers.

The federation urges a wide participation in what they call a "golden public relations opportunity" for feed suppliers of the Northeast.

The program was inaugurated last year and is expected to gain increased momentum in the current contest.

The honor awards offered by the federation are made possible through sponsorship of the National Molasses Co., Oreland, Pa. The awards are called the Austin W. Carpenter honor awards in recognition of the federation's executive director.

The federation territory is divided into four zones: New England; New York; Delaware and Maryland; Pennsylvania and New Jersey.

In each of these zones the winner will receive a sterling silver trophy, plus a cash payment of $100 to help pay the expenses of the winner and his wife in attending the annual convention of the federation at Whiteface Inn, Whiteface, N.Y., June 8-10, 1958.

To be eligible, the contestant must be a member of the EFFM and a retail distributor of feed. Entries for the contest close Feb. 15.

The program is aimed at stimulating the interest of and giving encouragement to young farm people who are thinking of making agriculture a life career. It may include 4-H or FFA members, but not necessarily so. It can be developed for older young people who are actually starting farm operations of their own.

In the 1957 contest, Marshall's Feed Mill, Horseheads, N.Y., was the winner in the New York zone contest and A. Carino & Sons Co., Williamstown, N.J., took top honor in the Pennsylvania-New Jersey zone.

Agency Appointed

ST. LOUIS — T. W. Hardy, Jr., president of Hardy Salt Co., St. Louis, which has manufacturing facilities in Manistee, Mich., has announced the appointment of Batz-Hodgson-Neuwoehner Advertising Agency, St. Louis, to handle advertising and sales promotion for Hardy Salt products. Promotional plans will emphasize trace mineral salts and the new Hardy Saltrazine, a formulation of trace mineral salts and phenothiazine for parasite control in cattle and other ruminant farm animals.

Thousands of feed mills and grain elevators have Improved their Facilities, and made* CORN SHELLING A TRULY PROFITABLE OPERATION *through use of TRIUMPH shelling systems recommended by TRIUMPH engineers and distributors.

Our TRIUMPH Engineering and Sales Organization Specializes in solving problems in all phases of handling and processing ear corn . . . efficiency from the dump pit to the cob bin is the aim. Only TRIUMPH offers corn shellers in enough variety of size and type around which highly efficient shelling systems can be developed for every commercial need whether large terminal elevators or small local custom feed plants or mobile feed grinding trucks.

TRIUMPH Engineers have perfected better corn shellers for the industry to . . . speed up shelling rates . . . handle corn efficiently whether shuck is heavy or light . . . thoroughly shell wet corn . . . recover all the shelled corn from cobs . . . air clean shelled corn for market grades . . . with compactness, durability and dependability.

In addition TRIUMPH Engineers and TRIUMPH trained Distributors help to provide TRIUMPH users with . . . free flowing dump pits . . . better drag and pit screw feeders . . . better arrangement and balance of accessories to eliminate bottlenecks . . . easier housekeeping . . . lower insurance rates, and lower construction costs.

Cob disposal problems are studied by TRIUMPH men to develop . . . low cost cob handling . . . separation of cob and shuck . . . cyclone collectors for cobs . . . cob litter processing systems . . . better cob bins . . . faster cob bin unloaders . . . all working toward faster and more economical operation.

Through use of TRIUMPH Corn Shelling Systems, your service to your customers can be greatly improved, operating costs lowered, and profits increased. The valuable experience of TRIUMPH Engineers and Distributors is a plus value gained by buying TRIUMPH.

Tell us the capacity you need. Then send the coupon for full details!

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MILL PROVED

CORN SHELLING

Systems

THE C. O. BARTLETT & SNOW CO.
6249 HARVARD AVENUE, CLEVELAND 5, OHIO

☐ Send me fully descriptive literature about Triumph Shellers.
☐ Send a Sales Engineer. ☐ Shelling rate required.....per hour.

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Special Steamed BONE MEAL

Minimum 70 BPL high in required minerals. Packed in paper-lined jute bags.

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P. O. BOX 8 • FORT WORTH 1, TEXAS

Unique new formula for

PREVENTS COCCIDIOSIS · STIMULATES GROWTH

DR. SALSBURY'S

UNISTAT

FOR SUPERIOR CHICK AND GROWING FEEDS

Now, with Dr. Salsbury's UNISTAT, you can formulate superior chick and growing feeds with the profit-producing properties you have been seeking for both yourself *and* growers!

UNISTAT is not only a better growth stimulant that increases feeding efficiency and improves pigmentation...*it is highly effective in the prevention of E. tenella, E. necatrix and E. acervulina coccidiosis* because it contains...

A NEW AND DIFFERENT ANTI-COCCIDIAL AGENT THAT PERMITS DEVELOPMENT OF IMMUNITY

UNISTAT's unique coccidiostat 3, 5-Dinitrobenzamide combined with Acetyl-(para-nitrophenyl)-sulfanilamide and 3-Nitro-4-hydroxyphenylarsonic acid make up a completely new compound.

UNISTAT is compatible with normal feed ingredients, antibiotics, vitamins; is palatable, easy to handle. It provides more of the benefits sought by poultry raisers while satisfying the most critical and exacting scrutiny in both laboratory and field tests! It's economically practical too!

You can have the complete details regarding these tests and all the other data you will need to be among the first to formulate superior chick and growing feeds with UNISTAT. Write, wire, or phone today for UNISTAT Feed Manufacturers Guide.

FEED PRODUCTS DIVISION

DR. SALSBURY'S

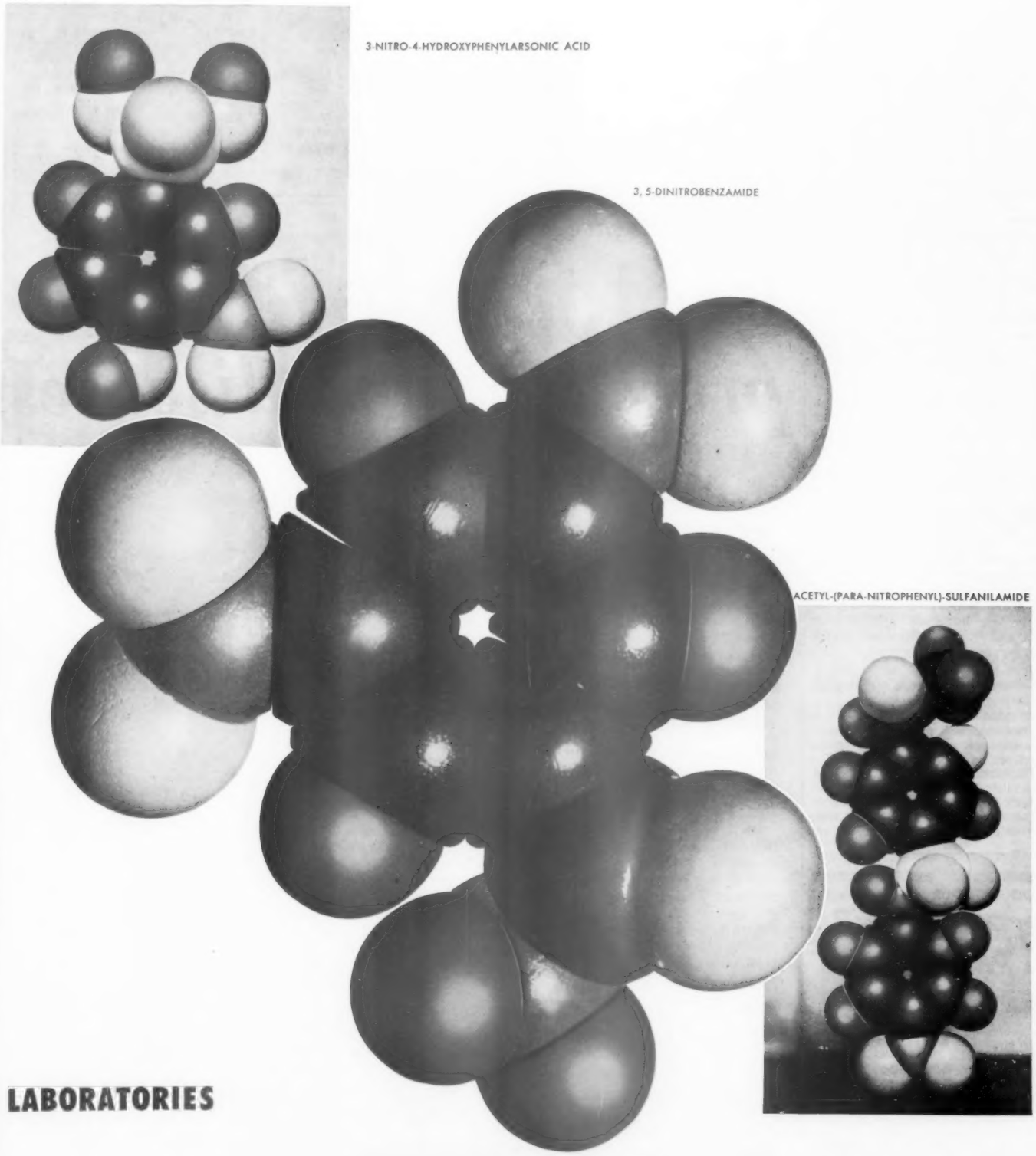
Charles City, Iowa

LOOK TO Dr. SALSBURY'S **FOR FEED**

nation-wide service to

increasing profits...

· IMPROVES CONVERSION AND PIGMENTATION



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the feed industry

Factors Affecting the Location of Egg and Poultry Production

"The Southeast will be a favored area for continued broiler expansion, partly at the expense of other regions. Certain types of egg production will prosper in the Midwest, at the expense of smaller operations in the same area and at the expense also of eastern and perhaps western producers."

By Edward Karpoff
U.S. Department of Agriculture

EDITOR'S NOTE: One of the most important factors for feed men in all areas to consider is the ultimate location of poultry production. Certain trends have been apparent, and many feed men have felt the changes made in type of operation as well as location. In the accompanying article, a USDA poultry expert analyzes factors affecting the location of production. In general, Mr. Karpoff feels the Southeast will be a favored area for continued broiler expansion, partly at the expense of other regions. He also sees the Midwest continuing as an important egg producing area, in spite of some predictions to the contrary. He expects certain types of egg production to prosper in midwestern states at the expense of smaller enterprises in the same area and at the expense also of producers in the Northeast and perhaps the Pacific Coast. This article is condensed from a paper prepared by Mr. Karpoff.

Nature imposes hardly any absolute limitations upon the location of poultry production in the U.S.—eggs and poultry meat can be produced in every state. Production costs will vary among locations, but this is not an absolute deterrent. Such relatively high-cost producing states as California and New Jersey have a place in the egg business, together with Iowa and Kansas. High-cost states have an advantage in marketing that enables them to continue as important competitors in egg and poultry production.

In inducing poultry production in an area, closeness to market and consequent higher-than-average prices for products offset high costs. The net difference between costs and returns would be the starting point in a strict economic analysis of trends in location of production. Comparisons of costs and returns would reveal the likely geographic patterns of future poultry production.

But in actual practice, I believe that the choices which result in greater poultry development in Location A than in Location B are made according to more than just economic concepts.

At any rate, I believe that egg and poultry meat production of the future will remain diverse both in geographic location and in organization of the enterprise, with evolutionary rather than revolutionary changes in the location of the industry.

As a personal judgment, I can recognize the southeastern U.S. as a favored area for continued expansion of broiler production, partly at the expense of the Northeast and Pacific Coast. I can see certain types of egg production prospering in Minnesota, Iowa and Wisconsin at the expense of smaller enterprises in the same area, and at the expense also of northeastern and perhaps Pacific Coast producers. For possible shifts in location of turkey production, I have no fixed ideas.

Economic Bases for Location Choices: Feed represents about 60% of the cost of producing eggs or poultry meat. So a location close to the source of feed supply tends to favor a poultry enterprise. Ordinarily this would be construed to favor a midwestern location, and, in fact, I think it does, but before we generalize, let's look a little closer.

Chickens don't eat just straight feed grains—or at least the producer who feeds only home-produced grains won't long be a factor in commercial competition. The economic criterion

DOUBLE YOUR TONNAGE and
TRIPLE YOUR PROFITS!

HONEGGER LEGHORNS
A natural profit-maker with plenty of follow-up poultry feed sales. An exclusive with HONEGGER DEALERS.

BIG "H" FEEDS
Are tested and proved at Honeggers' 600 Acre Practical Test Farm. The superior results of Big "H" Feeds mean repeat orders and repeat profits.

FARM BUILDINGS
Honeggers' complete line of competitively priced, pre-built farm buildings are an extra "exclusive" profit plus for Honegger Dealers.

EQUIPMENT
Honegger Dealers can have equipment shipped prepaid with their cars of feed. Honeggers' full line of modern labor-saving equipment makes an excellent "door opener" for extra feed sales.

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From poult to processor...

Protective feeding *prevents more diseases*

...stimulates growth rate...gives more meat per pound of feed!

nf-180 is best for reducing poult death losses. Starting them on nf-180 fortified feed is mighty good insurance when you figure your investment per poult and the disease risk young turkeys face every day. By preventing a wide range of specific diseases and reducing egg-transmitted diseases, protective feeding with furazolidone (nf-180) markedly reduces poult deaths. Just feed 2 pounds nf-180 per ton of complete ration and head off the big share of your turkey disease problems before they start... and cut death losses*.

nf-180 gives your poults a healthier start by effectively reducing subclinical or hidden infections that sap vitality and retard growth. And a well-started poult is a more economical grower . . . has a much better chance to become a money-maker for you. No other drug prevents and controls as many turkey diseases as furazolidone.

nf-180 stimulates growth...gives more gain per pound of feed. Besides fighting disease, furazolidone (nf-180) helps birds make better use of feed... grower experience shows that feed savings alone more than pay for nf-180 protective feeding. nf-180 helps birds put on more meat from each pound of feed . . . keeps them "on feed" and gaining, even during periods of stress when feed consumption ordinarily drops. What's more, it's non-toxic . . . absolutely safe for birds of any age.

The benefits you get by starting poults on the furazolidone protective-feeding plan also extend through growing and finishing. For example, in recent university tests, furazolidone completely eliminated blackhead death losses while mortality in non-protected flocks ran as high as 25%.

From poult to processor, keep your flock on furazolidone-fortified feeds. You save valuable birds, eliminate gain-robbing disease and stress, grow more turkey per pound of feed.

**furazolidone (nf-180) in starter feed prevents:*

- BLACKHEAD
- PARATYPHOID
- HEXAMITIASIS
- SYNOVITIS
- TYPHOID
- PULLORUM
- CRD (air sac)
- PARACOLON
- BLUE COMB (non-specific enteritis)
- QUAIL DISEASE (ulcerative enteritis)

furazolidone
nf-180
One of those lifesaving
nitrofurans
germ killers that last

HESS & CLARK, Inc.
ASHLAND, OHIO

2 pounds of *nf-180* per ton is expressed on feed tags as 100 grams furazolidone or 0.011%.

regarding feed costs is based on the price of a balanced ration. And on that, the advantage of being close to crop sources becomes obscured by trade customs affecting markups, by credit practices and by the degree of competition among suppliers.

USDA makes monthly surveys of farmers' paying prices for poultry feeds. In July, 1957, for example, the average price for laying mash in the Northeast was only slightly higher than the average in the west north central regions. Taken as a whole, the natural advantage one would expect in the grain belt does not exist. On a gross overall basis, to obtain the advantage, the poultryman has to swing bargaining power to bring the price down from the average level paid by his non-commercial neighbors.

Availability of home-grown grains plus the opportunity to combine them with commercial concentrates or balancers gives grain-growing poultrymen an advantage over those who have to buy their entire ration. This principle is almost equally applicable to poultrymen whose supplies are locally grown grains from surplus grain areas outside the traditional Corn Belt.

Labor costs and alternative opportunities for people who turn to poultry raising also affect location of production, especially of broilers, because the usual arrangement under financing is much like an employer-employee relationship. Broiler production has expanded most rapidly in recent years in Georgia, Alabama and Mississippi. In those states, USDA estimated the composite farm wage rate at less than 50¢ an hour on July 1, 1957. In other regions, no state had average rates below 61¢. The highest composite average rates—a dollar or more per hour—were in the Northeast and Pacific Coast. By more than mere coincidence, these latter two groups of states include California and Connecticut, two states where broiler growing is declining.

Higher Prices Near Markets Help Offset Higher Costs: The concept of where poultry can be produced most cheaply has to be balanced against an understanding of where principal ultimate markets are and where the highest prices can accordingly be expected.

Prices in the terminal markets are higher than in the areas from which the terminal markets draw their supplies, and prices at intermediate points fall in line. In deficit areas which are located on the "far" side of recognized terminal markets, produce is re-sold for even higher prices than those received in the terminal markets. This is necessary in order to attract supplies. Combined with consumer preference for "nearby" produce, this price structure serves to give an advantage to producers near cities that have to draw farthest for their supplies. To this extent, some producers located in areas of higher-than-average cost have a considerable offset in terms of higher-than-average prices received.

To a greater extent than commonly realized, some of the advantages enjoyed by producers located close to market can be enjoyed by moderately specialized producers more distantly located. Lower marketing costs related to transportation can't be matched, but the premium on "nearby" eggs and poultry is really, in the basic analysis, a premium for quality. USDA researchers have found that Minnesota and Wisconsin producers selling eggs into a quality egg program, with flocks large enough to justify frequent gathering and pick-up, were paid on a basis comparable to eastern market prices for high-quality eggs. These farmers did not receive the same price as that paid the eastern producer, yet their price, grade for grade, was about equivalent to the price paid the eastern producer, minus transportation. This kind of situation goes a long way toward equalizing midwestern and East Coast (or Pacific Coast) returns, as compared with previous practices.

Although it tends to favor the Midwest, this kind of quality egg development favors only the participants in it, and the run-of-the-mill producer is left out in the cold. I think the kind of flock that provides pin-money for the midwestern farm wife is on the decline; but from here on the decline is likely to be painfully slow because the judgments regarding it aren't made according to conventional economics.

Another point: these midwestern poultry flocks, even when conducted on a basis larger than a pin-money deal, have a modest day-to-day labor requirement. On most general farms the occasional need for heavy work inputs dovetails with the labor supply and the work requirements of other enterprises. The opportunity to share cost items such as truck and water supply also means that added expense on account of the chickens is less on general farms than on highly specialized farms.

These factors explain why general farms will continue to produce an important proportion of the U.S. egg supply. But to a greater and greater degree, these flocks on general farms will be managed under businesslike conditions that more closely approach management practices of specialized poultry farms closer to the centers of population.

Just as distant egg producers are staking a place for themselves in quality egg markets, a new technology enables low-cost broiler producers to serve far-away markets. When antibiotic additives are mixed in the chill water for poultry, several strategic days are added to the "shelf life" of ice-packed fresh poultry. This enables Texas and Mississippi broilers to sell in competition with native West Coast chickens, and is a factor in the cut-back in chicks placed in the latter area.

Areas Must Support Industry Serv-

(Continued on page 24)

nf-180
with furazolidone
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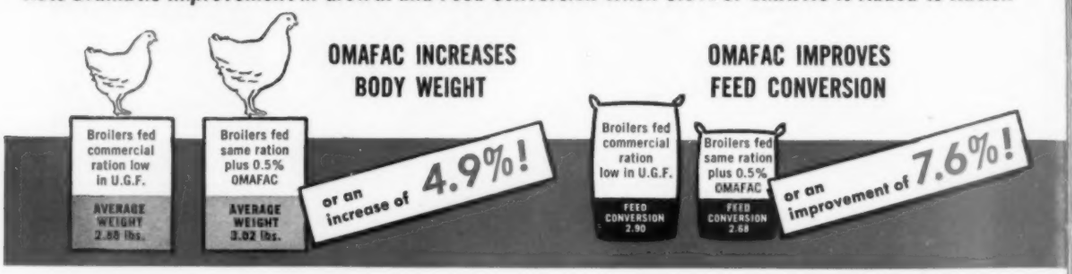
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ices: The areas where poultry enterprises will grow and prosper have to be specialized enough, and to include sufficient volume, to support the service and marketing facilities that the modern poultry industry needs.

A lone commercial poultry enterprise, isolated among farmers pursuing other specialties, won't have a choice of feed suppliers competing for his business. If an isolated producer should need a poultry-remedy to quell an outbreak of disease, the chances are that a supply house at the county seat would have to order it, for the store would not be likely to keep it in stock. When the isolated commercial producer had eggs or chickens to sell, in quantities larger than local retailing would absorb, again he would have to create an outlet, rather than find a choice of ready-made outlets such as occur in an established poultry community.

In an established poultry community the already-existing marketing facilities handle sufficient volume to enable each buyer to keep his operating costs fairly low, and to compete from an initial price level that reflects low overhead costs per unit. This condition is frequently overlooked by people considering only the physical aspects of poultry production.

Financing, as in Broiler Production: This leads us to the subject of broiler financing. Certainly in the development of chicken meat production the business sprang up overnight in new areas. It did indeed, but under circumstances that fit the limitation in the preceding paragraph, "carefully planned and adequately financed . . ."

The central figure in broiler production is the financier or contractor. Even a small contractor—a crossroads feed dealer—will put out a flock a week. At that rate, he will have an average of 10 flocks on feed at a time. I submit that by his own enterprise he has created a local specialized poultry industry—to say nothing of additional similar promotions probably originating from other nearby feed dealers.

Contract broiler growing has had its most enthusiastic acceptance in areas that lacked satisfactory sources of income and employment for a surplus farm population. In the Chesapeake Bay area, broilers were accepted when profits from egg production and from vegetable crops were failing. In northwest Arkansas, fruit enterprises, particularly peaches, were on the downgrade when broilers were introduced. Returns from cotton farming were unsatisfactory in north Georgia when the broiler industry gained its toehold there.

Chronically low income, or the failure of previous agricultural standbys, created circumstances in which the broiler industry could thrive, but this does not explain why it grew in Georgia earlier than in Mississippi and Alabama, or why the center of hatching egg production remained so long in New Engiand. We look for explanations of these aspects of the development of the industry in a study of people and personalities.

The Role of Individuals: The personalities and personal choices that influence location of poultry include leaders who are recorded in poultry annals—the developers of broiler production in Georgia, and the New England breeders who had already developed fast-growing strains of Plymouth Rock and New Hampshire and Rhode Island Red chickens at the time a demand materialized for broiler stock. By having such stock and the breeding know-how behind them, they established New England as the early center of breeding and hatching egg supply for meat-type chickens.

Somewhat less thoroughly heralded are the choices and preferences of thousands of smaller enterprises whose individual actions have influenced the location of the poultry population, especially egg flocks. What I have in mind is really only a step removed from the cliché about the city man's wish to "retire to the country and raise chickens." Chickens don't require heavy labor or a tremendous investment. They are a familiar species of domestic animal, not frightening nor overwhelming to an urbanite, as a cow or horse would be. So migrants from the city are attracted to chickens—and therein is the basis for the development of the commercial egg business in central New Jersey, now one of the most intensive egg-producing areas in the United States.

Similar concentrations of specialized egg production on small acreages are found in California, and in my one visit to the area I formed the impression that much of this too was done by ex-city people.

Age of Operators: The 1954 Census of Agriculture has summarized findings on the age of operators of specialized poultry farms. On such farms in 1954, half of the operators were 55 or older, and 20% more were 45 to 54 years old. (A farm must receive 50% of its gross income from eggs and poultry to be classified as a specialized poultry farm.) This age distribution probably means that many specialized poultry farms will disappear when their operators age further, because the short-term prospects for the poultry business will not appear rosy enough to attract newcomers to specialized farms to take the place of those who are growing old. Since these specialized farms are so numerous in the Northeast and the Pacific Coast, it seems to me that this is additional reason for expecting a reduction in the share of the nation's future egg and poultry output from those areas.

New Morea Stations

CRETE, NEB.—The Feed Service Corp. has announced the establishment of new Morea blending stations at Plattesburg, Mo.; Tekamah, Neb., and Altus, Okla.

At Plattesburg, the blending station is owned and operated by Eldon Freeman, Sur-Gro Plant Food Co. Robert Jeep, Liquid-Feeds, Inc., will operate the Tekamah station, and J. C. Prescott, Prescott-Jeep Co. will manage the Morea installation at Altus.

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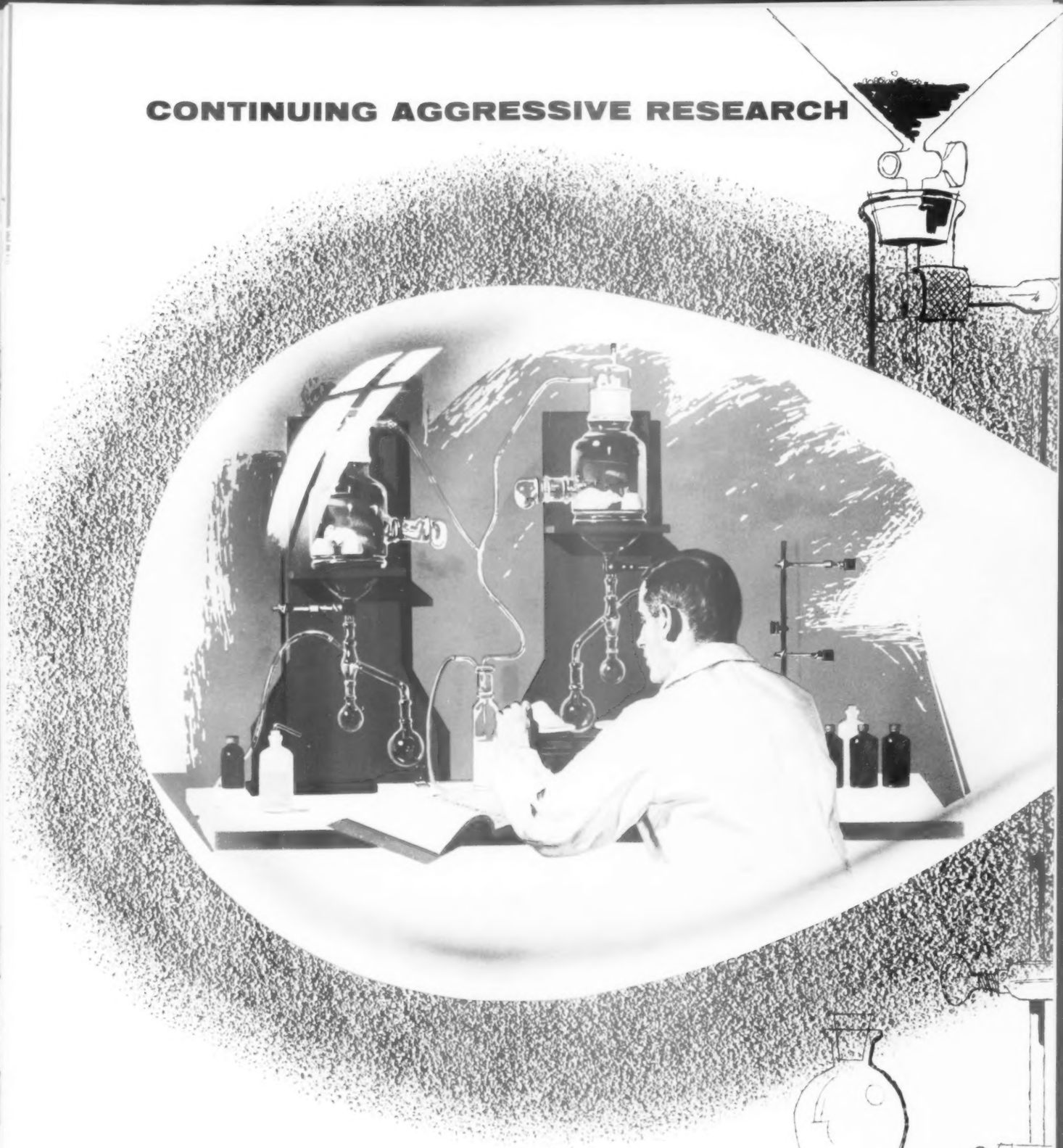
CONTINUING AGGRESSIVE RESEARCH



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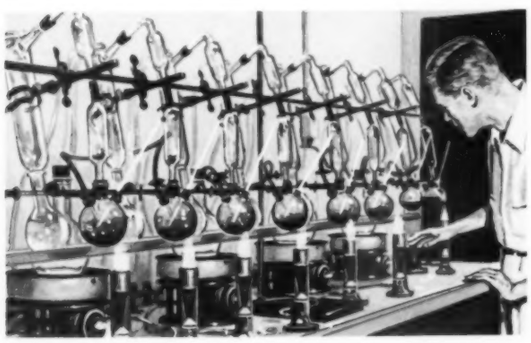

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Dr. Leo Ottey

JOINS PFIZER—Dr. Leo Ottey has been added to the staff of the agricultural research and development center of Chas. Pfizer & Co., Inc., near Terre Haute, Ind. Dr. Herbert G. Luther, director of the experimental facility, announced that Dr. Ottey, a biochemist, will be attached to the center's basic research group. Before joining Pfizer, Dr. Ottey was assistant professor of bacteriology at Dalhousie University, Halifax, Nova Scotia. Prior to that he was a research assistant at Stanford and Duke Universities. He holds a B.S. in chemistry and a Ph.D. in biochemistry from Cornell University. Dr. Ottey's professional societies include membership in the American Chemical Society, the Society of American Bacteriologists, Sigma Chi and Phi Kappa Phi.

Cattle Numbers Show Little Change in Canada

WINNIPEG—There was virtually no change in the total number of cattle and calves on farms in Canada on Dec. 1, 1957, compared to the number on hand Dec. 1, 1956, according to the Dominion Bureau of Statistics.

The latest estimate of 10,293,000 head compares with the revised estimate of 10,379,000 head Dec. 1, 1956. However, this marks the first time since 1950 that a decrease in cattle numbers was recorded.

Milk cows, estimated at 3,087,300 head, were slightly below the December, 1956 revised estimate of 3,092,000 head.

Beef cows, estimated at 1,951,300 head on Dec. 1, 1957, compared with the 1,912,200 head on hand 12 months previously, a rise of 2%. A 2.5% decrease in eastern Canada was more than counter-balanced by a 3.3% rise in the West.

Other beef cattle showed decreases. Heifers dropped off 13.7% while steers declined 1.5%, despite a 6.7% rise in numbers of steers on farms in Ontario. Steers on farms in western Canada showed a 7.3% decrease. Calf numbers on Dec. 1, 1957, increased 1.2% to 2,775,000 head.

The number of sheep on farms in Canada Dec. 1, 1957, are estimated at 1,111,500 head, an increase of 3% over the revised estimate for Dec. 1, 1956. All of the increase occurred in Ontario and the western provinces.

The number of horses on farms fell from 745,500 on Dec. 1, 1956 to 702,500 12 months later, a drop of nearly 6%.

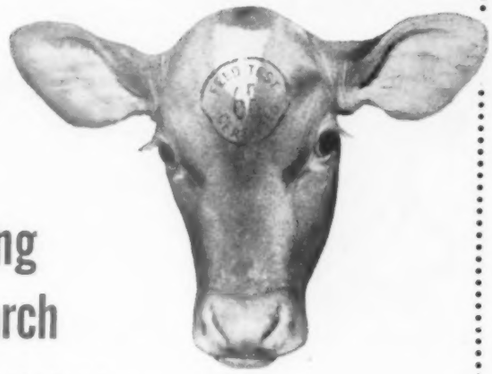
F. S. Freer Retires From Cleveland Firm

CLEVELAND, OHIO — Frederick S. Freer, assistant treasurer of the V. D. Anderson Co., manufacturer of grain drying equipment, retired recently after more than 50 years with the company.

He joined the firm in 1904 as a draftsman and has served in engineering, purchasing, sales, service and general administration. At one time he was purchasing agent, then general manager, and for the past 35 years he has been assistant treasurer and manager of the parts department.

A retirement party, attended by other retired employees, officers and department heads, was held in Mr. Freer's honor recently in Lakewood, Ohio. Mr. Freer was presented with a tape recorder, together with a recording of the evening's ceremonies.

The Anderson company is a subsidiary of the International Basic Economy Corp., Cleveland.



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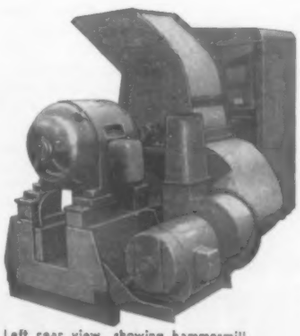

Left rear view, showing hammermill motor, fan motor, fan, suction pipe, fan discharge housing and actuator electrical junction box.

Right rear view, showing screen magazine with three screens; single screen illustrates screen carriage arms.

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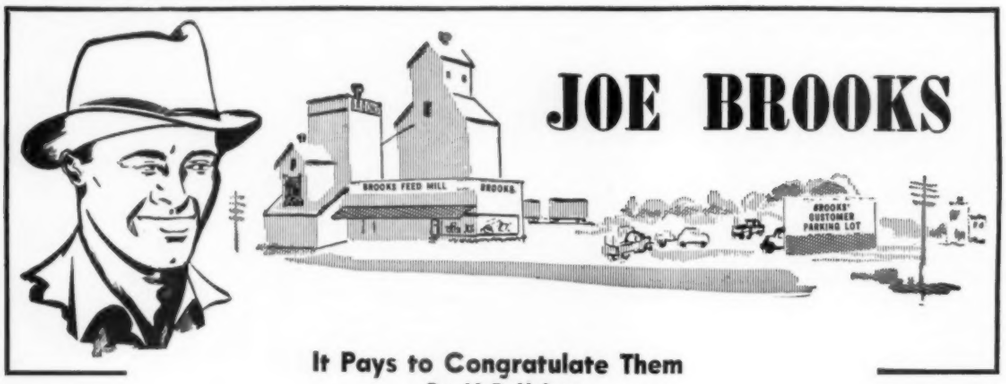

It Pays to Congratulate Them

By Al P. Nelson

The late winter day was cold. The thermometer was below zero and when one walked along the street white smoke, or frozen breath, trailed behind him.

A light delivery truck drove up into Joe Brooks' parking area, and a tall man in storm coat, fur cap and wearing galoshes got out and came toward the mill. A few minutes later he was standing in Joe Brooks' office.

The man took off his steamed glasses, wiped them with a handkerchief and looked at Joe seated at the desk. "Mr. Brooks?" he asked.

"That's me," Joe smiled. "What can I do for you?"

"I'm Fred Gasker," the man stated. "I'm a dealer over in Hancock County. Ed Swanson, the ABC Feed Co. salesman, was telling me about some of the things you do in your business, and so I thought I'd come over and see your setup and ask some questions, if you have time."

"Sure," Joe said. "Ed is quite a salesman. Always accommodating. I'm afraid he brags a little too much, especially about me. I'm no whiz."

"We'll see," laughed the other. "I got a good impression already as I drove in here. I like the layout of your yard, your mill and I notice you've got some new mixers—two in fact."

Faster Service

Joe nodded. "Yes, and a new hammer mill, too. The new mixers are bigger than my old ones and the mill is more efficient. We can grind and mix better and faster now. Process a ton of feed in about 15 minutes if the corn isn't too wet. Farmers don't have to wait so long for service now. They like it and we do, too."

"I'm glad to hear you say that," Fred Gasker replied, crossing his long legs as he took a seat in a wide armed chair. "I figure on improving my machinery setup, too. But the chief reason I came to see you today was to find out how you send all those congratulatory letters to farmers all the time. Salesmen say it has built good will and extra store traffic for you."

Joe smiled, scratching his head just behind the right ear, a habit of his. "I've been sending such letters for about five years. I figure that everyone likes to get letters, especially folks who have done something."

"What do you mean, marriages, and things like that?"

"Yes, that and other things," Joe replied. "When a young farm couple gets married, they like a personal letter of congratulation wishing them happiness. The same is true of farm folks who have been married 25 years or 50 years. We've got form letters for those occasions. Rusty is a good typist and he changes them slightly each time to suit the occasion. And I always sign them."

The other dealer looked thoughtful. "Yes, I can see where farmers would like that," he said.

"When a child is born to a farm couple, they get a letter," Joe went on. He turned around and pulled a folder from his file. He got a letter and showed it to Mr. Gasker. "And in case of a farm death we always send a note of condolence. When a farmer is elected an officer of a milk or other association I send a letter, congratulating him and saying I know he can do a good job."

Gasker Likes The Idea

"Say, that is a good idea," commented Gasker. "I congratulate farmers on those things when I see them and if I happen to think of it, but the letter idea is better. That's something he can show to his family and friends."

Joe nodded. "During the year I invite the president of different farm organizations in the county to come and talk at one of our employee meetings and tell about that group's problems and goals. We have about 16 employees now between our two

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mills and that makes a fair audience."

"Say, I could do that, too," Mr. Gasker said excitedly. "I have one dairy group official in my area who just loves to talk."

"I write letters to 4-H boys and girls, FFA leaders, etc., on their projects and encourage them," Joe said. "Those youngsters appreciate hearing from us. If a farm woman wins a prize for crocheting at her club, she gets a letter, too. And when a local farmer has his herd or flock, or crops written up in a state farm magazine he gets a letter, too."

"Yup, I can see where that will build a lot of good will," agreed Gasker. "Farmers like to be recognized and praised for what they are doing."

"And I never forget to send a letter to each farmer winning an award in the county fair," Joe pointed out. "I consider that very important."

Gasker was silent for a moment. Then, "Joe, I think you've got a fine idea, but how in the world do you find time to sell any feed if you get out so many letters?"

Joe laughed and leaned back a little in his swivel. "Fred," he said, "it doesn't take as much time as one would think. I sat down evenings and in a two week period wrote 14 sample letters covering all the points I have mentioned to you and a few more. Then I numbered them and gave them to Rusty Hagen, my bookkeeper. He and I get together once a week or oftener, as in case of a farm death, and decide which letter, by number, goes to whom. Now and then Rusty changes a word or two, as I indicated earlier, but many times no changes are needed. All the letters are really individual and, as I said, I sign all of them."

"But doesn't it take a lot of time on Rusty's part?"

Joe shook his head. "No, we send out about 10-15 letters a week. That isn't too heavy a load, but believe me it builds good will and store traffic, doesn't it, Rusty?"

The dark-faced, runty bookkeeper lifted his head from his books. "I'll say it does. Folks come in here and thank us for sending them those letters. And they buy feed and other items when they are here."

"Ten to fifteen letters a week," mused Gasker. "That means about 500 to 600 letters a year. If you had to write them all at once, it would be a big job, but 10-15 a week, that isn't bad."

"I like to carry out such a program," Joe said happily. "It keeps me, my wife and employees on our toes to report what's happening among farmers. And that makes us better able to talk with farmers. This isn't a program which costs a lot. Just time and some stamps."

Gasker rose. "Thanks a lot, Joe. I really appreciate your time and ideas. If you don't mind, I'll use some of those letter ideas myself."

"Go ahead," Joe said. "And while you are here let me show you my new equipment. I'm really proud of it, and so are the men."

Maryland Nutrition Conference Slated For March 20-21

COLLEGE PARK, MD.—The 1958 Nutrition Conference for Feed Manufacturers, sponsored by the University of Maryland, has been scheduled for March 20-21 at the Shoreham Hotel, Washington, D.C. It will open at 8:30 a.m.

Guest speakers at the Conference will be A. W. Brant, U.S. Department of Agriculture; Dr. G. M. Briggs, National Institute of Health, Bethesda, Md.; Dr. D. V. Catron, Iowa State College; Dr. G. K. Davis, University of Florida; Dr. James McGinnis, State College of Washington; Dr. G. L. Romoser, Monsanto Chemical Co., St. Louis. Other speakers will be from the University of Maryland.

Speakers at the first morning session are Dr. G. F. Combs, "Studies of Practical Broiler Rations"; Dr. McGinnis, "Effect of Enzymatic and Other Treatments on the Feeding Value of Cereal Grains for Poultry"; Dr. F. C. Wingert, "Studies With Growing-Fattening Swine," with emphasis on pelleting, copper sulfate and anthelmintics.

Three other speakers will appear at the first afternoon session. They are: Dr. W. C. Supplee, "Zinc, Potassium and Unidentified Growth Factors in Purified Poult and Laying Diets"; Dr. Briggs, "Recent Developments in Mineral Nutrition of Poultry and Swine"; Dr. G. K. Davis, "Advances in Mineral Nutrition of Ruminants"; Dr. J. C. Shaw, "Relation of Nutrition and Rumen to Intermediary Metabolism of the Ruminant." At this session Dr. Richard D. Creek and R. W. Henken will give field research reports on poultry and dairy and animal husbandry, respectively.

Opening the 9 a.m. session March 21 will be a talk on "Efficient Use of Roughages," by Dr. R. F. Davis. Following this talk, Dr. Catron will give a speech titled, "Up-to-the-Minute in Swine Nutrition." Other speakers will be Dr. McGinnis, "Studies on Nutrition of Layers and Breeders"; Dr. Combs and Dr. N. V. Helbacka, "Studies With Laying Hens," with emphasis on calorie-protein ratio, fat, zinc and protein sources; Dr. G. K. Davis, "Research in Agriculture." This talk will be given during a noon luncheon.

Speakers at the March 21 afternoon session will be Mr. Brant, "Do Present Day Broilers Taste Better"; Dr. Romoser and Dr. Helbacka, "Calorie-Protein Ratio and Zinc in Practical Chicken and Turkey Broiler Rations"; Dr. E. C. Leffel, "VFA Production by Rumen Microorganisms—Bloat." A question and answer period will follow this session.

University of Maryland Nutrition Conference committee members are Dr. Creek, chairman, Dr. Combs, Dr. R. F. Davis, Dr. J. E. Foster, Mr. Henken, Dr. Leffel, Dr. Shaffner, Dr. Shaw and Dr. Wingert.

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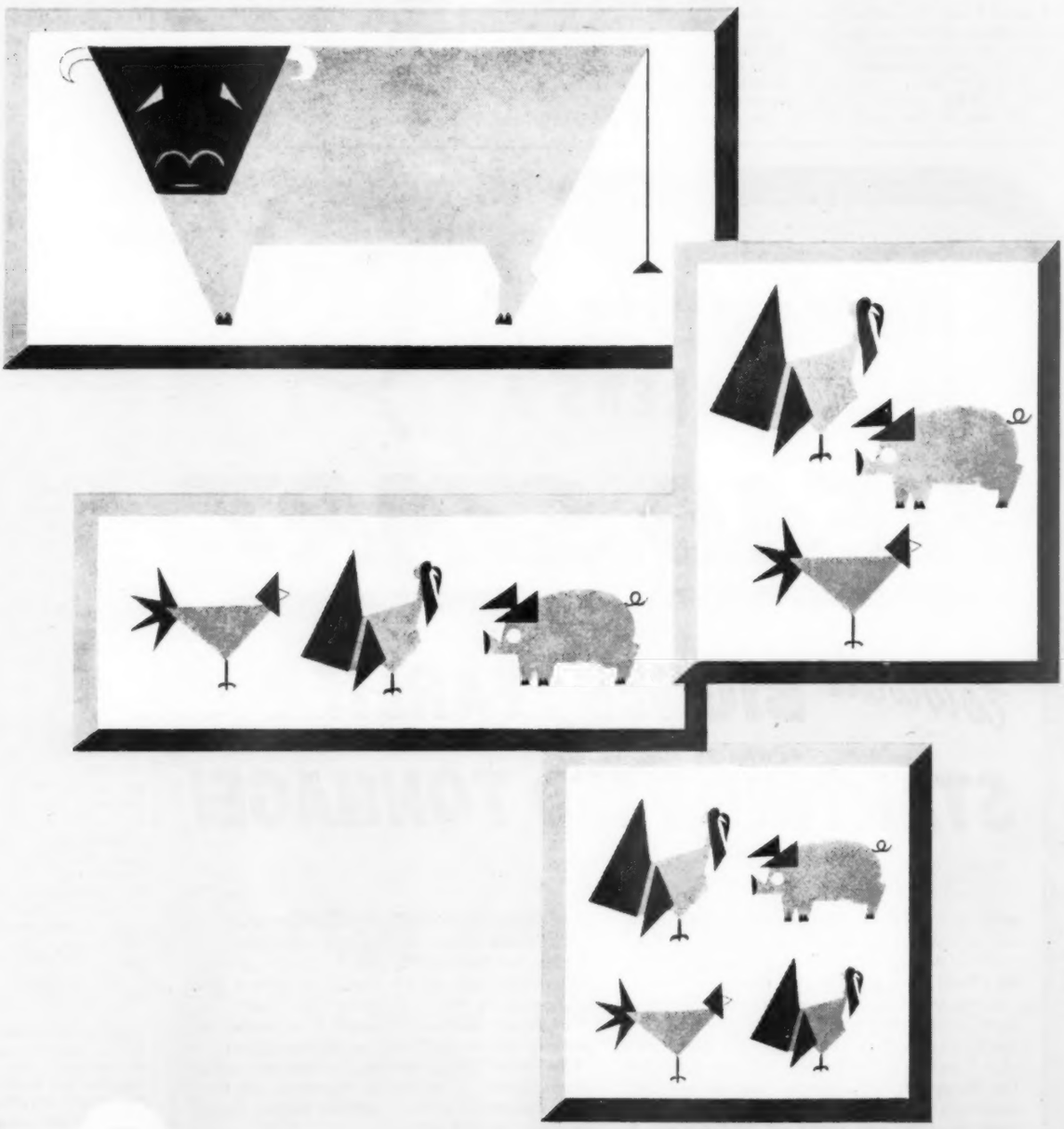

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EXHIBIT A — The Oklahoma Agricultural Experiment Station Test in which heifers were fed rations containing a total of 0.15% phosphorus to compare the phosphorus availability of Cura-phos, dicalcium phosphate, and steamed bone meal. Results as published in the May 1957 issue of Journal of Animal Science: heifers fed Cura-phos gained an average of 135 pounds against an average of 118 pounds for those fed dicalcium phosphate. "Results indicated equal availability of phosphorus in the three supplements."(1)

EXHIBITS B and C and D — previous reports showing similar findings for chicks, poults, and swine, in which the following conclusions were reached by independent university groups:

B — reports that steamed bone meal dicalcium phosphate, and Cura-phos "are essentially equivalent in the availability of their phosphorus and are satisfactory sources of this element in poultry rations."(2)

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Economics of Purchasing Cattle Feed

Here Is Some Basic Information on Figuring Feed Costs and Returns

Some basic information and data on the economics of purchasing cattle feed have been prepared by W. K. McPherson, professor of agricultural economics at the University of Florida, Gainesville.

It is information which can be of use to feed men in serving their livestock feed customers.

Some basic data on feed costs and returns were part of a presentation made by Prof. McPherson at the last Florida Nutrition Conference. The data are in the form of tables which the feed man can put to use in working with feeders.

	Price of Feed – Dollars per Cwt.								
Quality of Feed Lbs. Per Pound of Gain	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00
4.0	.04	.06	.08	.10	.12	.14	.16	.18	.20
4.5	.045	.067	.09	.112	.135	.157	.18	.202	.225
5.0	.05	.075	.10	.125	.15	.175	.20	.225	.25
5.5	.055	.0825	.11	.137	.165	.192	.22	.247	.275
6.0	.06	.09	.12	.15	.18	.21	.24	.27	.30
6.5	.065	.0975	.13	.162	.195	.227	.26	.292	.325
7.0	.07	.105	.14	.175	.21	.245	.28	.315	.35
7.5	.075	.112	.15	.187	.225	.262	.30	.337	.375
8.0	.08	.12	.16	.20	.24	.28	.32	.36	.40
8.5	.085	.127	.17	.212	.255	.297	.34	.382	.425
9.0	.09	.135	.18	.225	.27	.315	.36	.405	.45
9.5	.095	.142	.19	.237	.285	.332	.38	.427	.475
10.0	.10	.15	.20	.25	.30	.35	.40	.45	.50
10.5	.105	.157	.21	.262	.315	.367	.42	.472	.525
11.0	.11	.165	.22	.275	.33	.385	.44	.495	.55
11.5	.115	.172	.23	.287	.345	.402	.46	.517	.575

TABLE 1. Cost of gains using feeds of different qualities and prices.

Quality of Feed Lbs. Per Lb. of Gain	COST OF GAINS PER POUND																	
	.08	.09	.10	.11	.12	.13	.14	.15	.16	.17	.18	.19	.20	.21	.22	.23	.24	.25
4.0	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.25
4.5	1.77	2.00	2.22	2.44	2.66	2.88	3.11	3.33	3.55	3.77	4.00	4.22	4.44	4.66	4.88	5.11	5.33	5.55
5.0	1.60	1.80	2.00	2.20	2.40	2.60	2.80	3.00	3.20	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00
5.5	1.45	1.63	1.81	2.00	2.18	2.36	2.54	2.72	2.90	3.09	3.27	3.45	3.63	3.81	4.00	4.18	4.36	4.54
6.0	1.33	1.50	1.66	1.83	2.00	2.16	2.33	2.50	2.66	2.83	3.00	3.16	3.33	3.50	3.66	3.83	4.00	4.16
6.5	1.23	1.38	1.53	1.69	1.84	2.00	2.15	2.30	2.46	2.61	2.76	2.92	3.07	3.23	3.38	3.53	3.69	3.84
7.0	1.14	1.28	1.42	1.57	1.71	1.85	2.00	2.14	2.28	2.42	2.57	2.71	2.85	3.00	3.14	3.28	3.42	3.57
7.5	1.06	1.20	1.33	1.46	1.60	1.73	1.86	2.00	2.13	2.26	2.40	2.53	2.66	2.80	2.93	3.06	3.20	3.33
8.0	1.00	1.12	1.25	1.37	1.50	1.62	1.75	1.87	2.00	2.12	2.25	2.37	2.50	2.62	2.75	2.87	3.00	3.12
8.5	.94	1.05	1.17	1.29	1.41	1.52	1.64	1.76	1.88	2.00	2.11	2.23	2.35	2.47	2.58	2.70	2.82	2.94
9.0	.88	1.00	1.11	1.22	1.33	1.44	1.55	1.66	1.77	1.88	2.00	2.11	2.22	2.33	2.44	2.55	2.66	2.77
9.5	.84	.94	1.05	1.15	1.26	1.36	1.47	1.57	1.68	1.78	1.89	2.00	2.10	2.21	2.31	2.42	2.52	2.63
10.0	.80	.90	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50
10.5	.76	.85	.95	1.04	1.14	1.23	1.33	1.42	1.52	1.61	1.71	1.80	1.90	2.00	2.09	2.19	2.28	2.38
11.0	.72	.81	.90	1.00	1.09	1.18	1.27	1.36	1.45	1.54	1.63	1.72	1.81	1.90	2.00	2.09	2.18	2.27
11.5	.69	.78	.86	.95	1.04	1.13	1.21	1.30	1.39	1.47	1.56	1.65	1.73	1.82	1.91	2.00	2.08	2.17

TABLE 2. Prices, in dollars per cwt., that can be paid for feeds of different qualities to produce gains at different costs.

Prof. McPherson first pointed out that in making their decisions on buying cattle feed, including kind and amounts, farmers use three types of information—feed prices, estimates of feed efficiency and estimates of prices livestock will bring. Primary attention is given here to economic evaluations of alternative feeds.

To emphasize the importance of having accurate data on the amount of feed required to produce a pound of gain in the evaluation, two tables were prepared. The cost of gains for several different feeds at several different prices are presented in Table 1. These data show the value of reducing the amount of feed per pound of gain, or increasing amount of gain per pound of feed.

For example, a feed costing $4 cwt. that will produce 1 lb. of gain per 4 lb. of feed produces gains costing 16¢ lb. This gain costs less than gains obtained with a feed costing $3 cwt. of which it requires 6½ lb. to produce 1 lb. of gain—a gain costing 19.5¢. With this table, it is possible to compare economic value of feeds at different prices without carrying out the time consuming arithmetic.

In Table 2, the prices that can be paid for different feeds at varying costs are tabulated. This table is useful in estimating the maximum price that can be paid for feed in particular cost-price situations. For example, a farmer may decide he can earn an acceptable profit if his gains cost 18¢ lb. or less. On the basis of this decision, it is possible to pay up to $4.50 cwt. for feed that will produce 1 lb. of gain for every 4 lb. of feed fed—but only a maximum of $2 cwt. if 9 lb. of feed are consumed per pound of gain.

Easy to Compare

There is nothing really new in these tables, Prof. McPherson says. They were prepared by making simple calculations that farmers and feed men make every day. However, they make it easy to compare the economic value of feeds that are reported to have nutritional values and are sold at different prices.

The economist went on to note that statements that any feed or ration will result in a specified number of pounds of gain per cwt. of feed or that any specified number of pounds of feed will result in 1 lb. of gain imply a direct relationship between amount fed and rate of gain. Actually, of course, such factors as class, sex, weight or quality of the animal enter in. For example, the feed man knows that young animals gain more rapidly than older mature animals, etc.

With more detailed data, it is possible to estimate how much feed to use to maximize profits under different cost-price relationships.

With an accurate estimate of gains made on specific amounts of feed, it is a simple matter to calculate the cost of feed per pound of gain. When

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BEEF PRODUCED		FEED CONSUMED		VALUE OF BEEF @ 20.00 per cwt.			RATE OF GAIN	COST OF GAINS AND NET RETURNS AT THREE LEVELS OF FEED PRICE							
								1.50 Per Cwt.			2.00 Per Cwt.			2.50 Per Cwt.	
Total Pounds	Lbs. Gained	Total Pounds	Additional Lbs. Fed	Total Dollars	Value of Beef Produced Dollars	Price of Beef Dollars	Pounds of Feed Per Pounds of Gain	Feed Cost Per Pound of Gain Dollars	TOTAL COSTS Dollars	NET RETURN Dollars	Feed Cost Per Pound of Gain Dollars	TOTAL COSTS Dollars	NET RETURN Dollars	Feed Cost Per Pound of Gain Dollars	TOTAL COSTS Dollars	NET RETURN Dollars
640	---	0	---	$128	-----	-----	-----	-----	$128.00	$00.00	-----	$128.00	$00.00	-----	$128.00	$00.00
	45		300		$9.00	0.20	6.66	0.1000			.1332			.16650		
685	---	300	---	137	-----	-----	-----	-----	132.50	4.50	-----	134	3.00	-----	135.50	1.50
	40		300		8.00	0.20	7.50	0.1125			.1500			.18750		
725	---	600	---	145	-----	-----	-----	-----	137.00	8.00	-----	140	5.00	-----	143.00	2.00
	40		300		8.00	0.20	7.50	0.1125			.1500			.18750		
765	---	900	---	153	-----	-----	-----	-----	141.50	11.50	-----	146	7.00	-----	150.50	2.50
	40		300		8.00	0.20	7.50	0.1125			.1500			.18750		
805	---	1200	---	161	-----	-----	-----	-----	146.00	15.00	-----	152	9.00	-----	158.00	3.00
	35		300		7.00	0.20	8.55	0.1283			.1710			.21375		
840	---	1500	---	168	-----	-----	-----	-----	150.50	17.50	-----	158	10.00	-----	165.50	2.50
	35		300		7.00	0.20	8.55	0.1284			.1710			.21375		
875	---	1800	---	175	-----	-----	-----	-----	155.00	20.00	-----	164	11.00	-----	173.00	2.00
	35		300		7.00	0.20	8.55	0.1284			.1710			.21375		
910	---	2100	---	182	-----	-----	-----	-----	159.50	22.50	-----	170	12.00	-----	180.50	1.50
	30		300		6.00	0.20	10.00	0.1500			.2000			.25000		
940	---	2400	---	188	-----	-----	-----	-----	164.00	24.00	-----	176	12.00	-----	188.00	00.00
	30		300		6.00	0.20	10.00	0.1500			.2000			.25000		
970	---	2700	---	194	-----	-----	-----	-----	168.50	25.50	-----	182	12.00	-----	195.50	- 1.50
	25		300		5.00	0.20	12.00	0.1800			.2400			.30000		
995	---	3000	---	199	-----	-----	-----	-----	173.00	26.00	-----	188	11.00	-----	203.00	- 4.00
	20		300		4.00	0.20	15.00	0.2250			.3000			.37500		
1015	---	3300	---	203	-----	-----	-----	-----	177.50	25.50	-----	194	9.00	-----	210.50	- 7.50
	20		300		4.00	0.20	15.00	0.2250			.3000			.37500		
1035	---	3600	---	207	-----	-----	-----	-----	182.00	25.00	-----	200	7.00	-----	218.00	-11.00
	20		300		4.00	0.20	15.00	0.2250			.3000			.37500		
1055	---	3900	---	211	-----	-----	-----	-----	186.50	24.50	-----	206	5.00	-----	225.50	-14.50

TABLE 3. Hypothetical analysis of feed costs and profits—Part A.

the cost of feed per pound of gain equals the price per pound of the live animal, profits are at a maximum. In other words, animals should be sold when the cost of putting on a pound of gain just equals the per pound selling price of live animals.

Analysis

A detailed analysis of the cost of feeding beef cattle using some hypothetical data is tabulated in Table 3. It isn't necessary to make all calculations shown in the table to decide when to sell livestock, Prof. McPherson noted, but the data are presented in detail to show the need for detailed data and to show the effect of differences in the price of feed on the amount fed.

The weight of an animal at each successive weighing appears in Column 1 and the gain or added weight in Column 2. In Column 3 the total amount of feed is tabulated, and in Column 4 the amount of feed fed during each interval is shown. The value or selling price of the animal at different weights appears in Column 5, and the value of the gains recorded in Column 2 is shown in Column 6 when the price of beef is 20¢ lb. as recorded in Column 7. In Column 8, the pounds of feed per pound of gain are shown. The cost of feed per pound of gain with $1.50 per cwt. feedstuffs is shown in Column 9 and the corresponding total cost and net returns are shown in Columns 10 and 11, respectively. The same calculations are recorded for feed at $2 and $2.50 in the remainder of the table.

Data in this table show that the cost of a pound of gain using $1.50 feed and the price of beef are equal when 3,000 lb. of feed have been fed. At this point the net returns are at a maximum—$26. Note that profits can be made on animals sold for the same per pound price at which they are purchased if feed costs are low enough. At the same time, if the animal had been purchased at less than 20¢ lb., the net returns would have been larger, but the maximum net returns would have been obtained with the same amount of feed.

If feed costs are $2 cwt., rather than $1.50, the situation changes. At $2, the cost of producing a pound of gain increases and maximum net returns are achieved by feeding from 2,100 to 2,700 lb. of feed—or when the cost of 1 lb. of gain is just equal to the cost of the feed. If feed costs $2.50 cwt., net returns are at a maximum when only 1,200 lb. of feed are used.

Prof. McPherson notes that the example analyzed in Table 3 is not entirely realistic because it does not take any change in quality of the animal into consideration. In most feeding enterprises, quality is increased one to three grades and selling price increases. This does not alter the validity of the statement that net returns are maximized when the cost of putting on the last pound of weight is just equal to the selling price of the animal per pound.

Data in Table 4 demonstrate this. Data on which this table is based are taken from Table 3 except that the selling price of the animal is varied from 20 to 26¢ lb. Under these conditions, the animal is fed 2,700 lb. of feed to a weight of 970 lb., which would maximize net returns when the feed cost is $2.50 cwt.

In the preceding example, it was assumed that the increase in price was due to an increase in quality. However, the prices of a given grade of cattle rise and fall, and if prices are rising more rapidly than the costs of producing the last pound of gain, net returns can be increased by feeding up to the point where the cost of producing the last pound just equals the price it can be sold for.

As the livestock industry becomes more competitive, farmers will find it necessary to estimate the point of maximum profits more accurately. Feed men can render a real service, Prof. McPherson says, by helping the farmers equal the cost of the last pound of gain with the price of the animals.

TOTAL POUNDS BEEF PRODUCED	PRICE OF BEEF PER POUND	FEED AT $2.50/cwt. FEED COSTS PER POUND OF GAIN	TOTAL COSTS	GROSS RETURNS FROM SALE OF BEEF ANIMAL	NET RETURNS
640			$128.00		$000.00
	.20	.16650			
685			135.50	$137.00	1.50
	.20	.18750			
725			143.00	145.00	2.00
	.22	.18750			
765			150.50	168.30	17.80
	.22	.18750			
805			158.00	177.10	19.10
	.22	.21375			
840			165.50	184.80	19.30
	.24	.21375			
875			173.00	210.00	37.00
	.24	.21375			
910			180.50	218.40	37.90
	.26	.25000			
940			188.00	244.40	56.40
	.26	.25000			
970			195.50	252.20	56.70
	.26	.30000			
995			203.00	258.70	55.70
	.26	.37500			
1015			210.50	263.90	53.40
	.26	.37500			
1035			218.00	269.10	51.10
	.26	.37500			
1055			225.50	274.30	48.80
	.26	.37500			
1075			233.00	279.50	46.50
	.26	.37500			
1095			240.50	284.70	44.20
	.26	.37500			
1115			248.00	289.90	41.90

TABLE 4. Hypothetical analysis of feed costs and profits—Part B.

Ralph E. Weed

T. I. McCarty

PROMOTED—B. F. Bowman, director of marketing for the farm and home division of American Cyanamid Co., New York, has announced the appointment of Ralph E. Weed as special representative of the eastern region, and T. I. McCarty as manager of the eastern industry sales district to succeed Mr. Weed. Mr. Weed has been associated with Cyanamid for the past 11 years. He was promoted to handle special accounts. Mr. McCarty will be responsible for sales of the company's feed and food products in 18 states. The company's principal animal feed products are supplements made from the antibiotic Aureomycin chlortetracycline.

RANCHER INSTALLS MIXER

TIVOLI, TEXAS—Roger Williams, a Tivoli rancher, has installed a modern, push-button feed mixing plant at his ranch headquarters near here.

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Meat Packers Spur Use of Enzymes to Tenderize T-Bones

Chemicals from Papaya, Pineapples and Figs Help Cut Costs of Steak-Eating

By John A. McWethy
Staff Reporter of the Wall Street Journal

CHICAGO — A discovery made over 400 years ago by Hernando Cortes now is enabling a growing number of beef lovers to cut the cost of steak eating.

When the Spanish conquistador marched into Mexico, he found the Indians tenderizing tough meat by wrapping it overnight in papaya leaves. The milk-like latex from this tropical fruit tree contains papain, a powerful enzyme that breaks down the tough connective tissues and muscle fibers in meat.

Now papain and enzymes from such other sources as pineapple and figs are increasing rapidly in importance as meat tenderizers. Papain was rediscovered in 1949 when Adolph's, Ltd., Burbank, Cal., started selling his tenderizer to grocery stores and restaurants. These two uses have steadily expanded but the biggest gains now are being shown in meat packing plants.

It wasn't until June, 1955, that the government gave packers permission to use enzyme tenderizers. Here's what's happened since that time:

"Meat packers are now using over 20,000 gal. of enzyme tenderizers a month," says Glenn H. Freeman, who is in charge of Adolph's sales to packing houses. "That's more than double a year ago and enough to tenderize about 6 million steaks." Adolph's over-all sales have increased in every year since 1949.

Armour & Co., one of the biggest packers, started using enzyme tenderizers commercially early in 1956. Now it tenderizes steaks for restaurants at five of its plants and D. B. Love, general manager of the frosted meat division, says tenderized steak sales now are running at more than twice the year ago rate.

At least one restaurant chain, Tad's Steaks, Inc., has built its business on enzyme tenderized beef. "We now operate six steak cafeterias and they are serving 8,000 people a day," Neal Townsend, president, says. "Up to late 1956 we had only one and it was selling about 1,000 steaks a day." Tad's opened its first restaurant on June 2, 1955, in San Francisco; it now also has them in Sacramento, Chicago, Detroit and New York.

Two Thirds to Housewives

Sales of enzyme tenderizers in 1957 probably didn't exceed $10 million, with two thirds or more of the total being in products sold to housewives. But this tiny business may not only change the type of beef Americans eat, it also may have far reaching importance in the multi-billion dollar business of producing and processing meat.

Enzyme tenderizers slash the cost of a tender steak. Visit any one of Tad's restaurants. For $1.09, you get an 11 oz. charcoal broiled sirloin steak, buttered roll, tossed salad and a huge baked potato. Scores of other restaurants now offer tenderized steak at prices little higher than that of ground beef.

Enzyme products help make these low prices possible by opening a short cut to tenderness. The traditional method, of course, is to fatten a steer on corn, a lengthy, expensive process. Around 30% of the beef consumed in this country comes from grain fattened cattle. These cattle also provide one of the major uses for corn and other feed grains.

The marbling of fat that this grain feeding puts in the meat helps make it tender. It also helps in adding extra tenderness when the meat is aged. Aging, of course, is expensive, too. The shrinkage and trimming loss on a choice grade beef loin aged for 21 days amounts to roughly 5½%, Swift & Co. estimates. And keeping beef in the cooler while it's aging adds to the cost.

Upgrading Beef

Enzyme tenderizing by-passes the grain feeding and aging, providing a way of upgrading the quality of beef from steers right off the range or from old dairy cows. Steaks from this type of beef are dipped in the tenderizing solution for roughly 60 sec. Packers then freeze the meat to halt the action of the tenderizer. Armour currently sells frozen, enzyme-tenderized, boneless sirloin strip steaks to restaurants for about 95¢ lb. The same cut from "choice" aged beef is $2.15.

Armour, in common with most oth-

EDITOR'S NOTE: The following article, taken from the Jan. 6 issue of the Midwest Edition of the Wall Street Journal, is reprinted with the permission of Dow Jones & Co., Inc., publisher. The article tells of rapid expansion of the use of enzyme tenderizers in meat. This development is of interest to feed men because of its potential effect on livestock grades and feeding practices.

Fat stability in feeds

is your problem too

As more and more feed manufacturers have recognized the value of using animal fats and meat meal in their feeds, consumption of these has gone up considerably. Along with this increased consumption, the problem of quality and stability has also grown.

As a feed manufacturer, you must be sure the animal by-products you buy are adequately stabilized against rancidity. For without sufficient stability, fat-containing feeds rapidly lose their palatability. Vitamin content and nutritional value decrease. To protect your feeds—to protect your sales—it is more important than ever that the fats and meat meal you buy be protected against deterioration by the proper antioxidant.

In recommending Tenox to your renderer, you are assured of receiving greases, tallows and meat meal of maximum stability. As the leading supplier of food-grade antioxidants, Eastman offers users the widest range available. Our long experience enables us to suggest not only effective and reliable formulations, but also the most efficient method of adding them.

If your renderer is not already using Tenox, tell him you want the protection of these efficient antioxidants. They are your best guarantee that your fat-containing feeds will win—and keep—satisfied customers. EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

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TRITHIADOL is the new, better, safer way to prevent coccidiosis in both broilers and replacement stock.

GET THE COMPLETE STORY, including figures on "best" feed conversion, from your Sterwin Technically-Trained Representative . . . or write, wire, phone direct.

ONLY TRITHIADOL HAS ALL THESE MAJOR ADVANTAGES

1. Effectively controls all economically important species of coccidia.
2. Completely safe for poultry; harmless to other warm blooded animals.
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5. Displays no adverse effects on egg production, shell or interior quality.
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7. Is compatible with all commonly used feed ingredients.
8. Stable, free flowing, easily blended with feeds.

*Alabama Polytechnic Institute, Univ. of Delaware.
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STOCKS AVAILABLE FOR IMMEDIATE SHIPMENT

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er packers, doesn't yet offer an enzyme-tenderized steak for sale through grocery stores. The product is somewhat tricky to use. If it's permitted to thaw too long before cooking, the steak takes on a liver-like consistency. But Armour's Mr. Love says, "Our ultimate goal is a product satisfactory for the housewife."

The tenderizers sold in grocery stores are commonly used by housewives not only on steaks but on such other cuts as pot roast and chuck. Packers contend, however, that the best results are obtained by tenderizing steaks from the tougher, lean type of beef.

Beef Dissolves

The enzyme products now being used are powerful counterparts of the natural enzymes which produce the tenderizing action when meat is aged. Researchers at the American Meat Institute Foundation, an industry-supported research laboratory, say that if you drop a chunk of beef in a strong solution of bromelain, the enzyme obtained from pineapple, in 12 hours the meat will dissolve. Some of the most potent enzymes aren't commercially available. Rattlesnake venom is one of the strongest. Probably the most powerful is found in the digestive juices of the eagle, a Swift & Co. researcher said. It's the stuff that helps the big birds digest small animals and other large pieces of food without chewing.

One of the enzymes being sold for meat tenderizing, Rohm & Haas Co.'s "Rhozyme P-11," is a fermentation product—it's made in much the same way as antibiotics. But two of the biggest sellers, the products made by Adolph's and Hercules Powder Co., contain papain. The Meat Institute Foundation has tested over 20 enzymes.

One meat packer is understood to be experimenting with injecting enzymes directly into live cattle. The enzymes are injected shortly before the animal is slaughtered to distribute the tenderizer evenly in the meat through the circulating blood.

Meat packers aren't confining their research on tenderness to enzymes. The Meat Institute Foundation is experimenting with the use of antibiotics and radiation to prevent spoilage while meat is aged at high temperatures. Meat tenderizes rapidly at high temperatures, which speed up action of the natural enzymes, but spoilage limits the amount of heat that can be used. Texas A&M College is studying the relationship between heredity and tenderness in cattle and beef.

Researchers are also attempting to develop better methods of measuring tenderness. A number of different devices have been developed for laboratory use. One checks the push needed to force a blunt needle into the meat. Another measures how much pressure it takes to slice the sample. Laboratories use taste panels that chew up meat. Then the members of the panel record their observations. The Massachusetts Institute of Technology has even developed a device that measures the force of a pair of artificial teeth used to chew meat. But research men say all these methods are slow and far from accurate.

"What is needed is some simple device with a dial that could be inserted in meat and that would give a quick, accurate tenderness reading," says Wesley Hardenbergh, president of the Meat Institute Foundation.

Tone Feeds Holds Mid-Winter Meetings

MINNEAPOLIS—Tone feed territory managers, representing distribution in six states, attended mid-winter sales meetings, recently in Green Bay, Wis., and St. Cloud, Minn.

In charge of the meetings was J. R. Lindell, sales manager of Peavey Feed Mills, Minneapolis, manufacturer of Tone feeds.

The spring 1958 promotions, including "100% livability guarantee" for both pigs and chicks, were presented and discussed by the two groups.

The firm's general manager, F. T. Heffelfinger II, expressed optimism for 1958 business and a continuing growth in the firm's business.

Other members of the Minneapolis staff participating in the sessions were Myron Carpenter, director of nutrition and product control, and J. R. Adams, advertising manager.

G.L.F. Opens Loading Facility at Buffalo

ITHACA, N.Y.—A new $700,000 train and truck loading facility at the G.L.F. Buffalo mill is now being used at partial capacity.

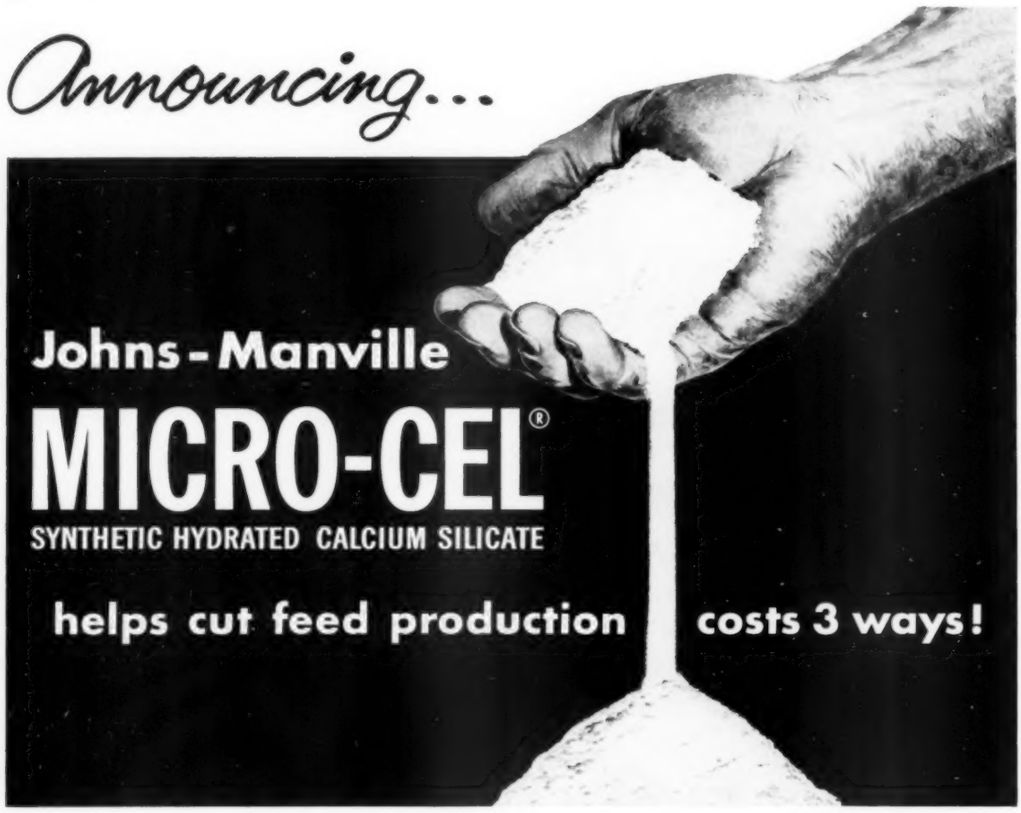
George Worley, plant manager, said the new addition is expected to be in full operation soon. "The production line will operate more efficiently with the new loading facilities, because we can schedule longer runs of each formula feed," he explained.

Built for sacked feed, the addition can handle 20 railroad cars at a time, in a 500-foot train shed. Trucks will also be loaded in the new section.

Radio Campaign

NEW YORK—Acronized poultry is one of the products currently being advertised on the Don McNeill Breakfast Club national radio show.

Sponsor of the promotion is the Farm and Home Division of American Cyanamid Co., New York. The show broadcasts over 300 stations daily at 9 a.m., EST. The advertising, which started Feb. 6 for a 46-week period, is directed toward the extended freshness of poultry that is Acronized.



A new, highly absorbent inert that reduces feed processing problems

TO HELP THE FEED INDUSTRY meet the demand for modern feeds—to help cut feed production costs—Johns-Manville Research now offers a new feed processing aid—Micro-Cel—"the powder that flows like a liquid."

1. Prevents caking of feed supplements and molasses feeds. At extremely low levels, Micro-Cel can eliminate the problem of caking in feeds and dry supplements. Micro-Cel in quantities as low as 1% allows a higher molasses addition in mash or pelletized feeds. Added to antibiotics and other hydroscopic materials, Micro-Cel can maintain free-flowing properties of material from manufacturer to mill.

2. Improves pellet hardness—reduces amount of fines. Pure, inert Micro-Cel, at levels of only ½ of 1%, can improve pellet hardness, reducing shipping problems and customer complaints. This clean, free-flowing powder will not impair nutrients—can be added to mix or premix without changes in existing mill equipment.

3. Eliminates the need of handling liquid fats. Micro-Cel promises a totally new concept of stabilized fat handling—by offering a way to ship and handle fats in *dry, powder form*. Because of Micro-Cel's tremendous surface area, it can absorb and carry liquids in quantities up to 300% of its weight and still remain free-flowing. A 3 to 1 combination of Micro-Cel and either liquid or solid fat provides a free-flowing powder that can be shipped, handled and added to feeds *without heating*.

Check Today on the amazing properties of Micro-Cel. Write us telling what application interests you, and we'll gladly send literature and a sample of the proper grade.

JOHNS-MANVILLE JM PRODUCTS

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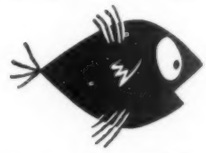
Food Without a Hook?



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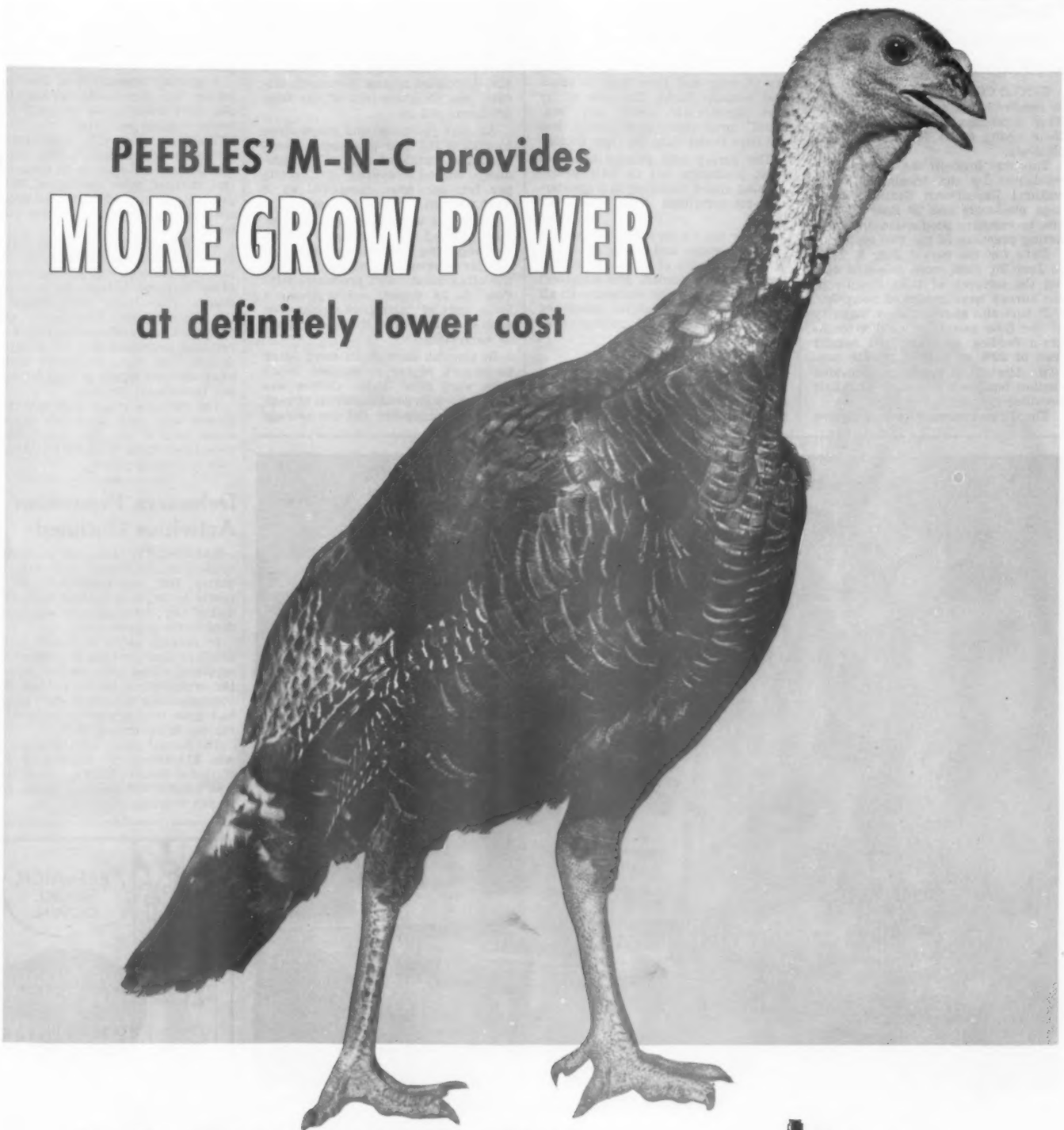

Scientific concentration adds 50% more nutrients!

Peebles' M-N-C (reduced lactose content) offers you a made to order way to step up turkey feed performance...because M-N-C is concentrated. It packs more *grow power*—50% more non-lactose nutrients than regular whey.

That's why with M-N-C you can mix more efficient turkey feeds at lower cost. Just 2½% M-N-C supplies the same amount of Whey Factor and other non-lactose nutrients as 4% whole dried whey.

Peebles' exclusive spray dried process retains all high activity unidentified growth factor benefits. M-N-C's spray dried texture assures you constant color and uniform distribution in feeds for lower mixing costs. Write or wire today for prices from shipping point nearest you.

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Mississippi Survey Compares Two Systems Of Raising Layers

STATE COLLEGE, MISS.—A larger percentage of cage producers than floor producers in Mississippi feed their laying flocks formula feed exclusively.

This was brought out in a survey, conducted by the Mississippi Agricultural Experiment Station, of 45 cage producers and 32 floor producers, to compare production and marketing practices of the two systems.

Data for the period July 1, 1955, to June 30, 1956, were collected during the summer of 1956. Results of the survey were published recently.

It was also shown that a majority of the floor producers used a mash-grain feeding program, and bought feed of 20% or higher protein content. Almost all producers provided shell or limestone and more than half provided grit for layers.

The annual average rate of lay for cage and floor flocks was 58% and 54%, respectively. Higher production in cage flocks was accounted for primarily by large flocks, since there was little difference in the rates of lay of cage and floor hens in small and medium flocks. The rate of lay was significantly higher and "seasonal" production significantly less for cage flocks than for floor flocks.

The survey also pointed out that most producers fail to fully utilize housing space, resulting in a greater-than-recommended floor space per layer.

Cages were equipped to provide adequate water and feeder space per bird. A majority of the floor producers used hand feeders and waterers; 47% used automatic waterers. In all cases, feeder and waterer space per hen exceeded general recommendations.

Most Common Diseases

Colds or bronchitis, leukosis and fowl pox were the diseases reported as causing the most trouble in laying flocks. Colds or bronchitis and leukosis were more prevalent in cage flocks, and fowl pox was more prevalent in floor flocks.

Nearly all producers vaccinated for fowl pox. While most cage producers also inoculated against Newcastle disease, less than one-half of the floor producers did so.

All cage producers and about three fourths of the floor producers reported use of artificial light. Cage producers burned an average of 1.3 watts per hen per hour, compared to .6 watt per hen for floor producers.

Producers with cage flocks generally followed the practice of culling and replacing their laying flocks at regular intervals during the year. On the other hand, most producers with floor flocks culled and replaced a large part of their flocks only once each year, usually in the late summer or early fall.

In general, cage flocks were found on more highly specialized farms than were floor flocks. Cotton was grown by a larger proportion of cage than floor producers, but the average acreage was smaller for cage producers. Nearly one half of the floor producers, in contrast to less than one fifth of the cage producers, grew grain.

A greater percentage of floor producers than cage producers kept beef and dairy animals, but generally kept fewer animals per farm.

The price received by a majority of producers was based on local supply and demand for eggs or on some central market price quotation. Retail grocery stores paid a greater premium for cage eggs than did any other outlet.

The following practices and factors may have influenced the price differential between cage and floor eggs: More frequent delivery by cage producers; cage flocks were larger on the average than floor flocks; cage producers followed more intensive advertising programs than did floor producers, and cage producers had a more uniform supply of eggs for market throughout the year.

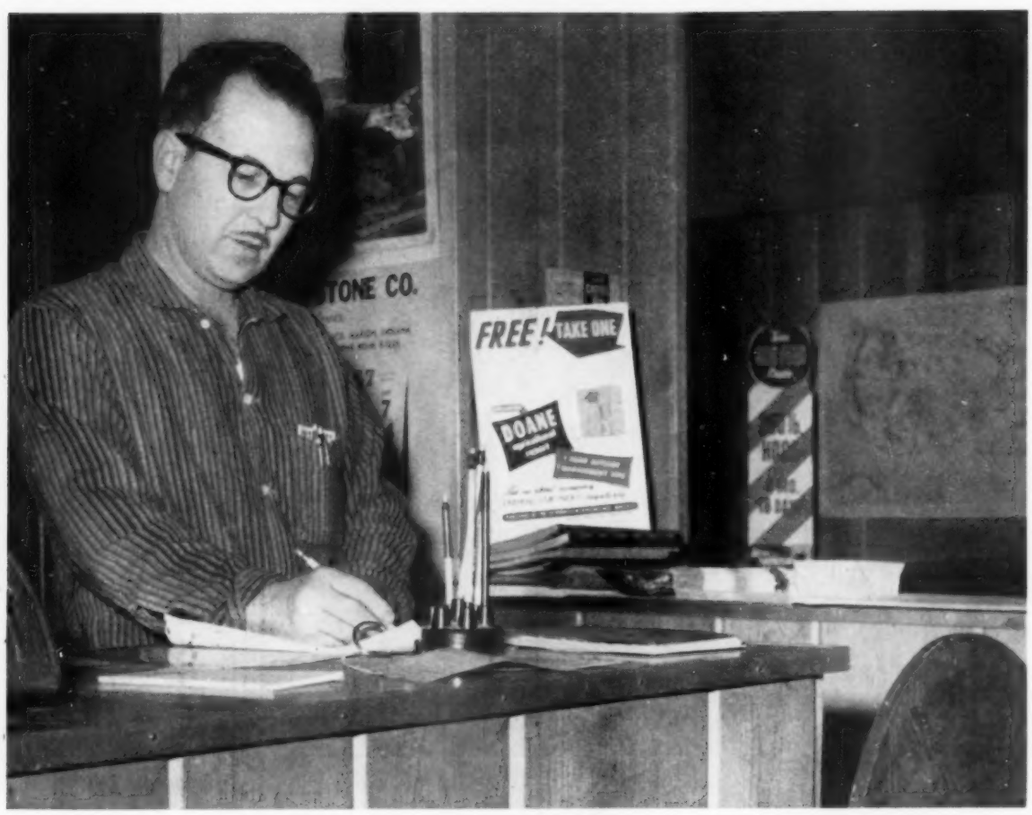
The survey revealed that more producers sold eggs to retail grocery stores than to any other outlet. More than three fifths of all eggs sold were sold to grocery stores.

Delmarva Promotion Activities Outlined

SALISBURY, MD.—The promotion activity of the Delmarva Poultry Industry, Inc., was described here recently as "a lot of mileage from each dollar" by John Hargreaves, president of the organization.

In making public a report to the area's broiler growers, processors and suppliers, whose contributions support the organization, he pointed out that approximately $80,000 of their money had gone into promotion projects of various kinds during 1957.

The largest single amount dispersed was $14,000 to the Poultry & Egg National Board. Another large item was $10,000 for expenses of the Delmarva Chicken Festival.



Mr. W. R. Aukerman, owner, Amboy Grain Company, Amboy, Indiana

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Amboy Grain Company, Amboy, Indiana, for example, is a long-time user of "Farming for Profit" as a public relations force. Mr. W. R. Aukerman, owner of Amboy Grain Company, says, "We feel 'Farming for Profit' is doing a good job for us. We get a lot of comments and our customers appreciate getting it."

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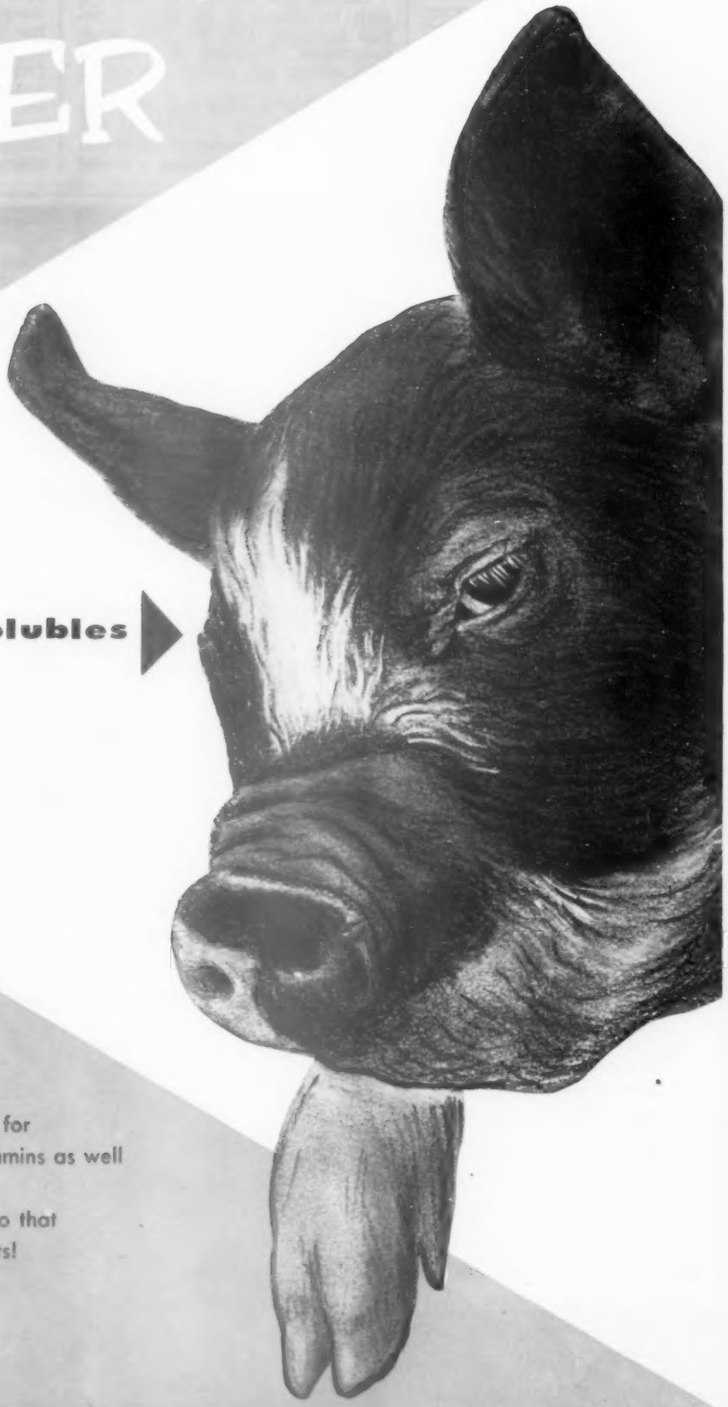

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Chicago Board Officials Call for Return Of Free Market

EAST LANSING, MICH. — "We must return to free market or face the socialization of agriculture, both in production and in marketing," warned Warren Lebeck, secretary of the Chicago Board of Trade, in an address at a luncheon recently sponsored by the Michigan Grain & Feed Dealers Assn. at Kellogg Center, Michigan State University. "Let us, in an orderly manner, allow the formula that made us great to keep us great."

Mr. Lebeck reviewed the intent of the Commodity Credit Corp. charter, the wording of laws creating CCC and statements of U.S. Department of Agriculture officials charged with administration of CCC. All pictured the CCC as an agency acting in harmony with the private trade.

Mr. Lebeck continued, "We at the Chicago Board of Trade in our efforts to work with USDA toward the maintenance of a free market have been reluctantly coming to the conclusion that we may be fighting a battle for survival, not only of futures markets, but of all markets—except, of course, the government.

"We compiled figures of weekly corn sales made by the government pawn shop over the last two years and, in my opinion, they add up to a stiff indictment of the uneconomic merchandising operations of the world's largest corporation."

What private corporation, asked Mr. Lebeck, could sustain the net loss of CCC operations this past year —nearly three billion dollars?

Tracing the rising CCC sales of corn, he pointed to the 60-week period beginning Oct. 10, 1956, when government "slugged the market with almost 350 million bushels of corn."

"Is it any wonder that the cash corn market, both country and terminal, became demoralized under this avalanche of government - owned corn," Mr. Lebeck demanded, "and that corn finally sold in the Chicago cash market during the last days of December at the lowest price in eight years?"

Mr. Lebeck endorsed the sentiment that price and income troubles of agriculture are the direct result of experiments with a socialistic, government-directed farm economy.

v v

CCC Criticized

CHICAGO — Government infiltration is one of today's greatest threats to private industry, Thomas E. Hosty, reelected chairman of the Chicago Board of Trade, told association members at their annual meeting at the exchange.

Mr. Hosty referred to the farm programs which have brought more and more direct restrictions to farmers, but have also had tremendous effects on related businesses. For example, Mr. Hosty declared, grain exchanges can no longer represent the best interest of producers and consumers.

In his summary of the year's work, Robert C. Liebenow, president, pointed out that the volume of over-all futures trading in grains, including soybeans, decreased 1,343,739,000 bu., or about 10%. Specifically, corn declined 19%, oats 27% and soybeans 24%.

Wheat and rye were the only commodities traded on the exchange which had an increase in volume.

Dollar volume for trading, both cash and futures, was approximately $25,041 million, down about 18% from the 1956 total. The decrease is attributable to smaller volume of futures trading and generally lower prices of commodities.

Harold W. Boyd

GRAIN MERCHANDISER—Central Soya Co., Ft. Wayne, Ind., has appointed Harold W. Boyd, Minneapolis, as grain merchandiser at the company's Chattanooga, Tenn., plant. Robert B. Parrott, vice president, made the announcement. Mr. Boyd has been active in grain merchandising for more than 25 years. He was previously associated with Archer-Daniels-Midland Co. and the Continental Grain Co., both of Minneapolis. He is a member, and past director, of the Propeller Club of the U.S. Port of the Twin Cities.

Poultry Breeder Ends Long Research Career

AMHERST, MASS.—A noted authority on the inheritance of egg production, Dr. Frank A. Hays, research professor in poultry genetics at the University of Massachusetts, retired recently after 35 years of service.

Dr. Hays served as director of the Massachusetts Poultry Breeders' School for the last 30 years. Other work he accomplished included the study of many phases of poultry breeding along with the supervision of graduate students.

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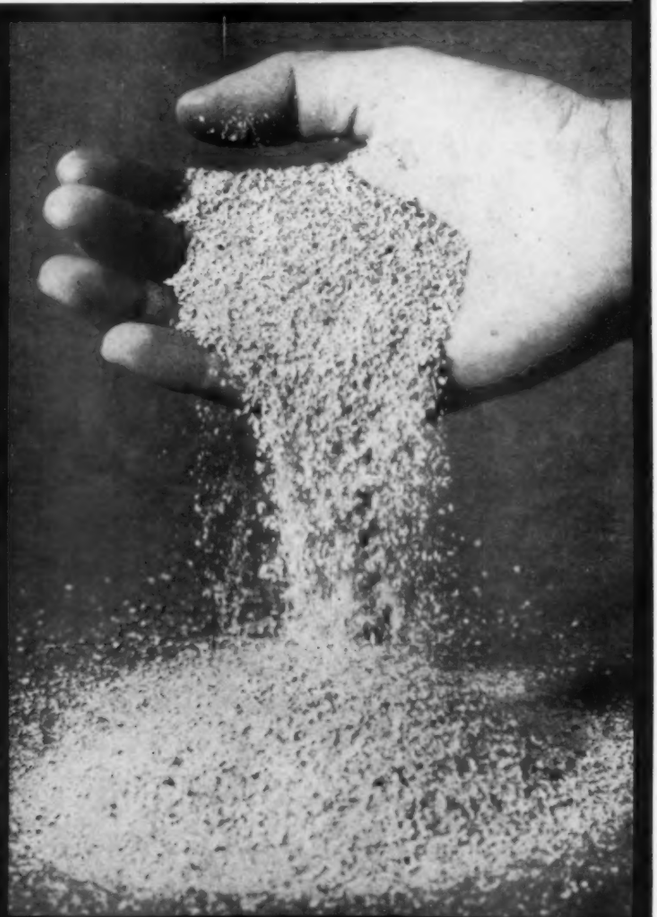

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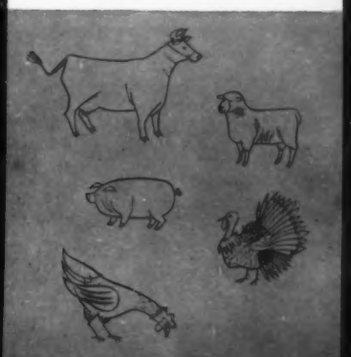

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Iowa Ruling Holds That "Custom Feed" Is Subject to Tax

DES MOINES—The attorney general of Iowa has ruled that feed mixed to a customer's specifications will be classified as "custom feed" and that "custom feed" is subject to a tonnage tax under the Iowa commercial feed law.

Clyde Spry, secretary, Iowa Department of Agriculture, said he asked for a ruling because a number of questions have been posed by the feed industry in regard to a proposed regulation defining "custom feeds" as a class of commercial feeds made to a customer's order.

The tonnage fee is required of "all corporations, firms or persons" engaged in the manufacture of commercial feeds sold in Iowa, to defray costs of sampling, inspection and analysis of commercial feeds.

The attorney general's ruling requires that the tax must be paid on feed manufactured to a customer's specifications at either a stationary or portable mixer, except when the customer supplies grain components produced on his own farm. Other exceptions are specified in the law.

In his opinion the attorney general said, "Since the Legislature's words —direct that manufacturers of commercial feeds for sale in Iowa shall pay a tonnage tax—it would be untenable to hold that one doing this should be held to be exempt simply because he is doing it in a variety of ways rather than one."

Mr. Spry, in his request for an opinion, pointed out that in the past several years there has been a marked increase in bulk handling of commercial feeds and mass dissemination to the poultry and livestock producer.

He explained that products which are made up ahead of time and stocked on the sales floor, or which are advertised for sale in any manner, are not custom feeds and thus would require individual registration and labeling. Also, bulk or packaged feeds labeled in the regular manner are not considered custom feeds.

Freight Rate Hike Suspended in Canada

TORONTO—In an unprecedented move, the Board of Transport Commissioners for Canada suspended an increase in Canadian freight rates on export-import rail traffic tied to a U.S. increase.

The increase, which originally was due to become effective Feb. 1, was postponed until Feb. 15, and has now been suspended indefinitely pending board hearings scheduled to start in Ottawa March 31.

Many protests have been made against the proposed 6¢ per 100 lb. (originally 10¢ 100 lb.) to be levied against export and import shipments through Canadian ports on most items, although bulk goods, such as grains, were excluded from this charge.

From ICC, U.S. railways received authorization to increase a series of freight rates that include those on export and import traffic through eastern and western ports. It has been customary for the board to grant similar increases in order to keep Canada and U.S. port rates at a semblance of parity to avert cut-throat competition for business.

Promotions Announced By Corn Products

NEW YORK — Michael D. Mullin has been appointed director of bulk product sales for Corn Products Refining Co., New York, announced Alexander N. McFarlane, vice president and general sales manager. Mr. Mullin succeeds Edward W. Schmitt who has retired after 46 years' service.

A 1934 graduate of Iowa State College, where he received a degree in chemical engineering, Mr. Mullin has held a variety of sales and marketing positions in his 24-year career with the company. Prior to his new appointment he served as assistant to the general sales manager. From 1954 to 1957 he was manager of the Milwaukee branch sales office.

Thomas A. Bruce has been appointed by Corn Products as assistant to the general sales manager, succeeding Mr. Mullin.

Mr. Bruce, a graduate of Bradley University, has spent 40 years with Corn Products, having started as a 15-year-old student. His previous assignments have been in manufacturing and research as well as sales. Until his new appointment he served as assistant bulk sales manager.

Big Demand Predicted For Canadian Cattle

SASKATOON, SASK. — An optimistic picture of the livestock market was described to young Canadian ranchers at a field animal husbandry session recently at Saskatoon.

F. M. Baker, director of field services for the Meat Packers Council of Canada, pointed out that Canadian cattle marketings increased by 8% in 1957 and suggested that a similar situation might be expected in 1958.

"Together, Canada and the U.S. have some 185-million people, all meat consumers, and with the highest consumer incomes and living standards in the world. At the moment, the demand for livestock products in this great market seems to be growing faster than production, and it has been suggested that within a few years this continent could well be on a net importing basis," he said.

Mr. Baker commented that in 1957 some 270,000 head of slaughter and feeder cattle went to the U.S. from Canada, compared with only 1,800 in 1956, due to the demand for replacement cattle in the Midwest. Exports of calves increased by 7,000 to 12,000, he said.

Firm Changes Name To Dr. LeGear, Inc.

ST. LOUIS—The Dr. L. D. LeGear Medicine Co., St. Louis, has a new name. It is now known as Dr. LeGear, Inc., following unanimous approval of the name change at a stockholders' meeting recently.

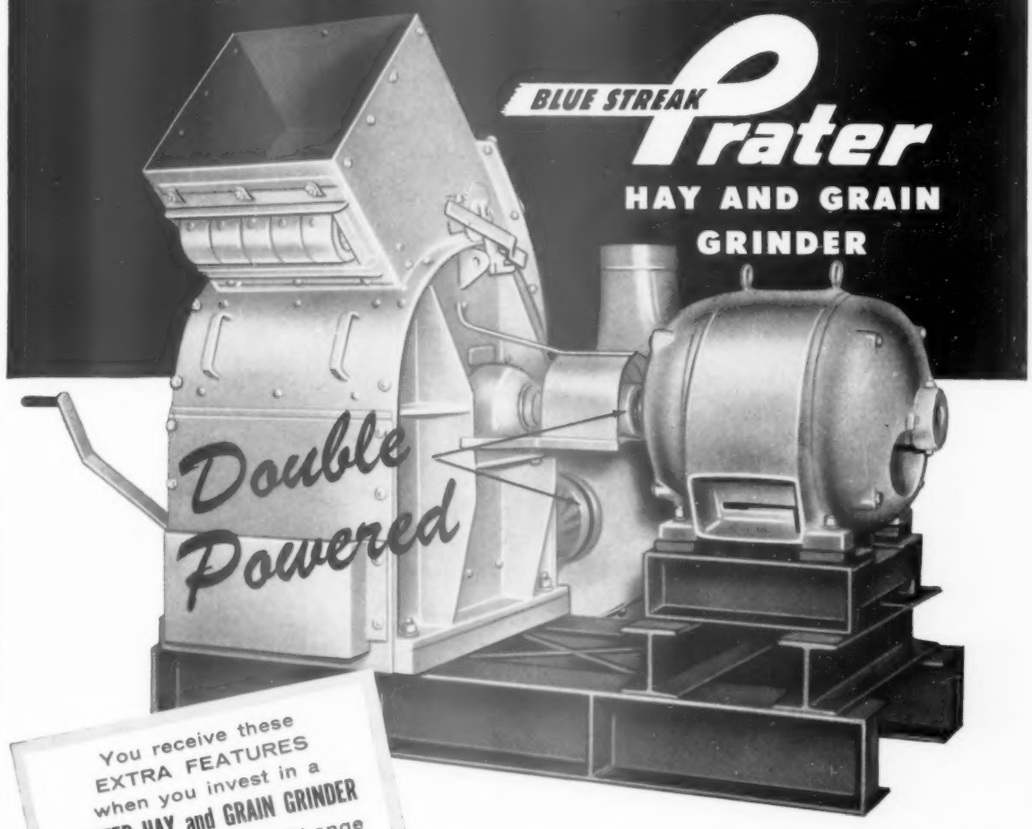
Directors of the firm pointed out that expansion of the firm's several branches and the broadening of the scope of operations made the new name advisable.

All officers of the firm, headed by Dr. D. H. LeGear, D.V.M., were re-elected during the meetings.

CLUB PLAYS HOST

ST. JOSEPH, MO.—The St. Joseph Feed, Seed, Grain & Fertilizer Club was luncheon host recently to persons attending the county rural prosperity conference here. The meeting was held to bring latest information on soils and crop practices to farmers in the county.

Easily Grinds All Roughages



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Built to take a licking, this double-powered PRATER Grinder delivers continuous smooth operation under the most difficult conditions. Handles all roughages, including hay, shucking ear corn, small grains and tough feeds without choke downs. Separately driven blower is not affected by shock loads; other stand-out advantages include no-stop screen change in seconds, battleship construction and extra large hopper.

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containing complete description

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Only Ter

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These comparisons show that the fighting power of Terramycin in your feeds gives greater disease coverage than even a combination of bacitracin, penicillin, sulfonamides, streptomycin and furazolidone.

If an antibiotic was given you at half-price . . . even free . . . it could be the most expensive purchase you ever made IF your feed containing this antibiotic did not stop disease from killing and setting back your customer's livestock and poultry. Chances are you lose a customer and through him, other customers.

Factors affecting performance of feeds containing antibiotics

A variety of disease organisms are ever present in a farm yard or feedlot.

A farm a few miles away may have an entirely different group of organisms to contend with. A feed containing a narrow-spectrum antibiotic may work wonders on one farm but fail on another just down the road.

Even on the same farm, disease organisms causing trouble vary with the season, the temperature, and as new herd and flock replacements arrive. A feed containing a narrow-spectrum antibiotic may work one time but fail the next.

Members of the same disease organism family vary in their virulence. A feed containing a narrow-spectrum antibiotic with only good or slight activity may stop a disease in its mild form but fail when the disease is severe.

A disease is seldom a pure infection. Usually a bird or animal is suffering from a mixture of infections. It's possible for a feed containing a narrow-spectrum antibiotic to hit the primary disease organism hard but miss the other infection(s) . . . and fail, in the judgment of the customer.

Seldom is a sick animal infected only with a pure intestinal or systemic disease. Many narrow-spectrum antibiotics are effective against either intestinal diseases or systemic diseases but not against both. A feed containing a narrow-spectrum antibiotic that is poorly absorbed from the intestines into the blood stream may just alter the course of a disease but not stop it.

Characteristics of Terramycin that protect the performance of your feeds

Pfizer produces or markets most of the antibiotics in use today—both in the human and agricultural fields. These include penicillin, bacitracin, streptomycin as well as Terramycin.

But all available research data and feeding trials point to Terramycin as the most effective antibiotic or drug when measured in terms of birds and livestock that *live* . . . when *feed efficiency* is evaluated . . . when pounds of *gain* are added up. These are the yardsticks by which your customers judge the performance of your feeds.

Terramycin has *excellent activity* in feed against a *wide range* of disease-causing organisms. As you can see from the chart, even if you *combined* bacitracin, penicillin, sulfonamides, streptomycin and furazolidone in your feed, it still wouldn't have the disease coverage you get with Terramycin alone.

Terramycin is effective against both intestinal and systemic diseases. It is more rapidly absorbed in the body than some narrow-spectrum antibiotics, and following absorption is transferred promptly from the blood to other tissues of the body.

Terramycin is effective against a wide range of disease organisms that cause diseases usually complicated by secondary infections in livestock and poultry.

Terramycin hits both gram-positive and gram-negative disease organisms.

Generations of poultry and livestock have been raised on feeds containing Terramycin. Yet Terramycin continues to have excellent activity against the most common and costly diseases. And new diseases your feeds with Terramycin can help stop are being added each year.

No other antibiotic or drug of any kind hits more diseases harder, faster, surer than Terramycin. To bring yourself up-to-date on the full list of diseases Terramycin-fortified feeds can control, call your Pfizer representative.

ramycin®

BRAND OF OXYTETRACYCLINE

se costly diseases

EFFECTIVENESS OF VARIOUS DRUGS AGAINST LIVESTOCK AND POULTRY DISEASES

(in feed unless otherwise indicated)
information based on available literature

DISEASE	ORGANISM	Terramycin	furazolidone	bactracin	penicillin	sulfonamides	streptomycin
Hexamitiasis	Protozoa						
Foot Rot	Actinomyces	*			*	*	*
Enterotoxemia (overeating disease)	Gram Pos. Bacilli						
Pneumonia	Gram Pos. Cocci	*			*	*	*
Lymphadenitis (jowl abscess)	"						
Chronic Respiratory Disease	PPLO Group	†					
Infectious Sinusitis	"	†					
Bloody Scours	Gram. Neg. Bacilli						
Baby Pig Scours	"						
White Scours (calves)	"						
Salmonellosis	"						
Leptospirosis (swine)	Spirochaetes				*		*
Blue Comb	Non-Specific or unknown etiology						
Synovitis	"	†					
Atrophic Rhinitis	"						
Shipping Fever (early stages-feed)	"						
Enteritis	"						
Bloat	"						
Psittacosis (Ornithosis)	Large virus	*					*

excellent activity — slight activity

good activity — no activity or not used

* = injection † = feed or injection

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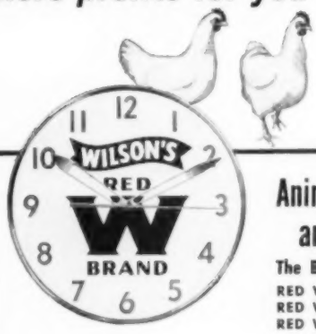
Only natural protein and feeding fat have important, unisolated growth factors—nature's own formula—so essential to the development of profitable livestock. That's why Wilson Red W Brand protein concentrates and Vitagen Feeding Fat enable you to produce high energy feeds for livestock and poultry that bring repeat business year after year—business based on meat on the hoof—money in the bank!



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RED W BRAND 60% Digester Tankage
RED W BRAND Special Prepared Bone Meal (70% Bone Phosphate of Lime—Minimum)
RED W BRAND Vitagen Feeding Fat

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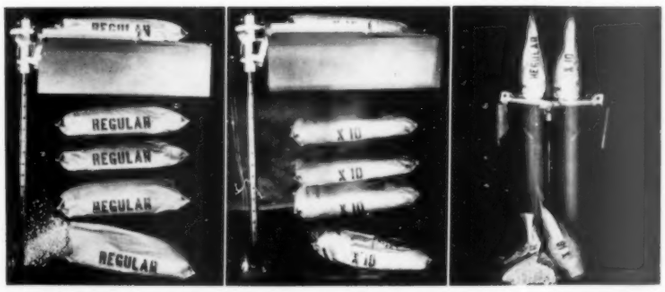

TOUGHER PAPER BAG—West Virginia Pulp & Paper Co. has made laboratory tests of a stretchable paper which it calls "Clupak" kraft. New "Clupak" bags are claimed to have survived more than twice the punishment of conventional kraft paper bags. In the picture at the left a multiwall sack of conventional kraft ruptures as it strikes the floor. In the center picture a multiwall of "Clupak" expands and absorbs the energy of its fall, without breaking. In the picture at the right regular and "Clupak" sacks are butt-dropped side by side. The regular kraft paper breaks and the one made by West Virginia Pulp & Paper falls intact.

West Virginia Pulp Manufactures New Stretchable Paper

NEW YORK—A stretchable paper product said to have unusual strength has been developed by West Virginia Pulp & Paper Co. under a patent held by Cluett, Peabody & Co., Inc., and now is being produced commercially.

The new paper is being manufactured on a new $25 million paper machine at the company's Charleston, S.C., mill, capable of producing up to 225 tons a day.

Trial runs of the paper have been carried out for a month on the Charleston mill machine, which is equipped with an extensible processing unit and is designed to make a sheet 20 ft. in width at speeds ranging up to one-half mile a min. Sanford Cluett, the man responsible for the shrinkage process behind the Sanforized trade mark, conceived the basic idea for extensible paper of this type.

Licensing rights will be extended to other paper manufacturers through a new company, Clupak, Inc., organized jointly by West Virginia and Cluett, Peabody.

The first Clupak papers being sold commercially are kraft grades to be used primarily in the manufacture of multi-wall sacks; specialty bags, including supermarket check-out bags; wrappers, and other kraft packaging products, and in numerous industrial applications where unusual strength is required. These grades will be marketed as Kraftsman Clupak paper.

West Virginia officials state that an increasing amount of the new stretchable paper will be available in the coming months as more of the company's machines are equipped with an extensible unit and as other paper producers are licensed to manufacture the new product. Installations of extensible units have already been planned for a second large paper machine at the company's Charleston mill and for a small specialty machine producing white papers at the company's Luke, Md., mill.

Missouri Producers Queried on Egg Law

COLUMBIA, MO.—The Missouri Egg Law hasn't helped the producer, according to 56% of 203 Missouri poultrymen polled in a recent survey by the University of Missouri.

Walter Russell and Glenn Geiger, extension poultrymen at the University, made the report on the survey. The law became effective during the summer of 1955.

Thirty-four per cent of the laying flock owners questioned felt that the egg law had been of help in their business and the remaining 10% expressed no opinion.

In general, the survey indicated that owner of the larger laying flock was of the opinion that the egg law had been of little value to the producer.

When asked what changes they had noted in egg marketing since the egg law went into effect, the producers gave both favorable and unfavorable answers.

Favorable comments included: Cleaner eggs on the market; more graded market available; poor producers have gone out of business; producers are turning out a better quality product; consumers are more quality conscious; more eggs are bought direct from producers; better markets for eggs during hot weather; dealers have installed refrigerated egg rooms; more infertile eggs on the market; a trend to larger flocks producing quality eggs.

Unfavorable comments included: Fewer places to sell eggs; many small producers are being forced out of business; lower prices to producers and higher prices to consumers; expense of grading being taken off producer's price; fewer grocery stores buying eggs from producers; too many undergrade eggs in Grade A cartons; big egg buyers have gained control of local markets; no change in unclassified markets; law isn't being enforced; more eggs are being shipped into Missouri from other states.

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BARN BECOMES LAYING HOUSE—This old barn was converted into a laying house at the York & Brumit Poultry Farm near Cedartown under the direction and suggestion of Cyrus Pope, serviceman for the Cedar Valley Milling Co. Some 500 Leghorns are housed on each floor, and the old milk room was converted into an egg cooler.

Serviceman Has Key Spot In Georgia Mill's Program

By Special Correspondent

A sound management program, built around a competent serviceman, can make the difference between profit or loss in the poultry business, Castro Jarvis, operator of the Cedar Valley Milling Co. at Cedartown, Ga., maintains.

Around 1950, when the broiler business was just beginning to start its tremendous growth in north Georgia and Alabama, Mr. Jarvis opened the mill to serve farmers in the Polk county area who had "a little corn to grind and some feed to mix."

While there wasn't much grain grown in the area, Mr. Jarvis recalled, there were few outlets to sell the grain locally, and as a result he began buying the grain and mixing it for poultry feed.

Since then, the mill has expanded its operations—which include feeding some 250,000 broilers on a contract basis—with Cyrus Pope, the serviceman, as the key man in the operation.

Mr. Pope is an unusual serviceman in several respects. He is one of very few handling such a volume of work without a college degree in poultry husbandry or in any specific phase of agriculture.

Knows His Customers

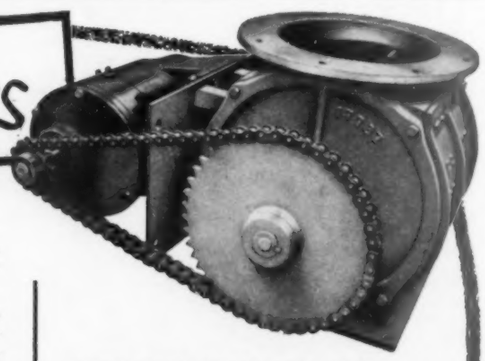
"Cyrus was raising chickens on his own," Mr. Jarvis said, "when he came to work for us. He had a very sound, practical background of experience, and most of the farmers around here knew him. So that got him off to a good start."

The Cedar Valley feeding program is built around the use of Swisher concentrates and methods, and it is used almost identically in each individual operation, whether it be broilers, breeders or laying hens.

Mr. Jarvis attributes a great deal of the success of the business to Mr. Pope's willingness to study new systems and methods—and particularly his frequent visits to the poultry disease laboratories set up in Canton and Cedartown by the Georgia Department of Agriculture.

"Most of our growers are on a 2¢ a lb. contract, with bonus arrangements for good feed conversions and

SPROUT-WALDRON ROTARY VANE FEEDERS with the Big Plus



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Whenever controlling the flow of materials is your problem, Sprout-Waldron Rotary Vane Feeders may be your *one best* answer.

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FE/474

EGG COOLING ROOM—Cyrus Pope, serviceman for the Cedar Valley Milling Co., Cedartown, Ga., helped the farmer pictured here, Edward Dyer, build an egg cooling and handling room into the ground. Mr. Dyer has a flock of about 1,200 birds. They were laying at better than 75% production when this picture was made.

low mortality rates," Mr. Pope said.

"When the market goes over 20¢, we work out arrangements which allow the grower to share in the additional profits, if any."

The company's plan of management includes adequate feeder and waterer space. Also, the program is based on the idea that it's a lot less expensive to prevent outbreaks in a flock of birds than to try to cure them.

The use of blackstrap molasses in the feeds as well as in the drinking water has been a big factor in holding down disease outbreaks, Mr. Pope said. At the same time it has helped to improve feed conversions and has stimulated faster growth, he said.

Swine Program

While Mr. Pope spends the better part of his time with poultry farmers, Mr. Jarvis said there has been "some increase in hog raising in this area."

Mr. Jarvis said the growth of hog markets in nearby Rome, as well as Atlanta, has been an added encouragement to produce more hogs, but the "dry-lot plan" hasn't attracted too much attention.

"We'll help a farmer with his hog program," Mr. Jarvis said, "by extending him credit while the hogs are

(Continued on page 50)

SERVICE VISIT—Cyrus Pope, right, service man for the Cedar Valley Milling Co., Cedartown, Ga., is shown as he visits with Mr. and Mrs. Jack Phillips in a check of their layers. The Cedar Valley Milling Co. has made contract growing of broilers a big part of its business. The mill owner, Castro Jarvis, says Mr. Pope is the key man in the operation.

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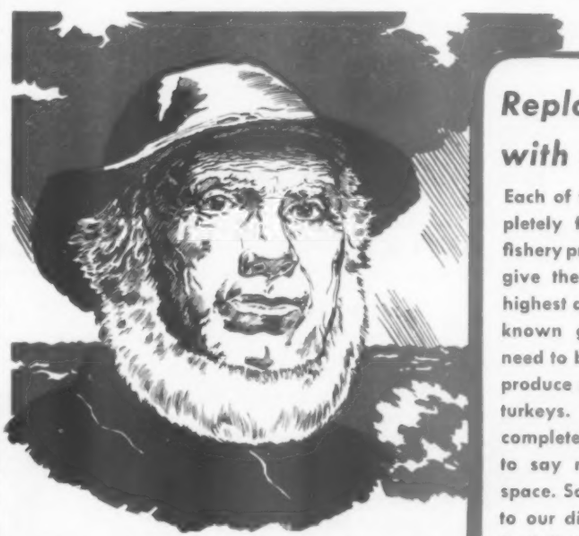

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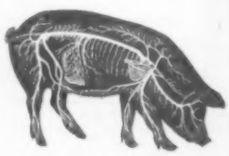
Fit the ration to the farm. There is a PRO-STREP level for every ration—PROFITOPPER

	SWINE		CHICKENS *(Layer and Breeder Rations)*	
Penicillin		Penicillin is absorbed and carried through the blood stream to every part of the body to effectively check pathogenic, gram-positive organisms. Penicillin also stimulates feed consumption, enhances weight gains and feed conversion. Grower is able to market more uniform pigs.		Penicillin is absorbed into the bloodstream of the growing or mature bird. It is carried to every part of the body and is effective against harmful, gram-positive organisms. Penicillin is particularly helpful at times of stress in maintaining or increasing hatchability of fertile eggs.
Streptomycin		Effective for prolonged periods of time in the intestinal tract, streptomycin acts against the gram-negative bacteria so often responsible for bacterial enteritis ("necro"). *Streptomycin will not interfere with the action of beneficial intestinal flora.*		Streptomycin is slowly absorbed from the intestinal tract. It provides "crop-to-vent" protection against pathogenic, gram-negative organisms. Streptomycin will not interfere with the action of beneficial intestinal flora.
Directions for Use	**25 Gm/ton** *(18.75 Gm. Streptomycin—6.25 Gm. Penicillin).* Feed continuously to stimulate growth, improve feed efficiency, increase feed intake and promote better uniformity of gains. **50 Gm/ton** *(37.5 Gm. Streptomycin—12.5 Gm. Penicillin).* Feed continuously until pigs are 50-75 pounds to: prevent bacterial swine enteritis; stimulate growth; improve feed efficiency; stimulate feed intake; and help promote better uniformity of gains. If outbreaks of enteritis occur, feeds containing 100 Gm. of PRO-STREP should be used. **100 Gm/ton** *(75 Gm. Streptomycin—25 Gm. Penicillin).* To treat bacterial swine enteritis feed rations fortified with PRO-STREP for 4-5 days or until symptoms disappear. PRO-STREP at the 100 Gm. level also may be used until pigs are 50-75 pounds to: stimulate growth, improve feed efficiency, increase feed intake and assure better uniformity of gains.		**25 Gm/ton** *(18.75 Gm. Streptomycin—6.25 Gm. Penicillin)* Feed continuously as an aid in maintaining or increasing egg production and to stimulate growth and improved feed efficiency. In the presence of disease, rations containing 100 Gm. are recommended. **100 Gm/ton** *(75 Gm. Streptomycin—25 Gm. Penicillin).* The following claims may be listed on your tags when PRO-STREP is fed at high levels to chickens: **a.** Reduce mortality and hasten recovery from C.R.D. **b.** Treat nonspecific infectious enteritis. **c.** Maintain feed intake and weight gains during C.R.D. and nonspecific infectious enteritis. **d.** Aid in maintaining or improving hatchability (of fertile eggs). **e.** Aid in maintaining or improving egg production. **f.** Prevent early chick mortality due to organisms sensitive to penicillin and streptomycin. **g.** Improve feed efficiency as related to egg production or weight gains. 1. Feed the first 10 days—then 3-5 days during, or immediately after, such stress factors as Newcastle disease or bronchitis vaccination, debeaking or housing pullets. 2. Feed for the first 10 days and then for 3 days out of every week until birds are marketed. 3. Feed continuously in case of disease outbreaks.	

MERCK & CO., INC. · CHEMICAL

Examine the **CLAIMS**—Check the **RESULTS**—
Compare the **COST** of PRO-STREP
with other broad-spectrum or single drug,
narrow-spectrum antibiotics.
You can't recommend a more effective
antibiotic supplement at less cost!

One Call—One Order—One Result—Customer Satisfaction
There is a Merck microingredient for your every formulation need. Ask the Merck Man about the complete line of antibiotics, vitamins, amino acids, multivitamin mixtures and coccidiostats with THE MERCK MARGIN OF SURETY!

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every need—
PROFITOPPER with low-cost
-STREP®

(Procaine Penicillin and Streptomycin Sulfate)

rations that will mean greater customer satisfaction and more repeat sales for you.

Here's how the synergistic action of Penicillin and Streptomycin in PRO-STREP helps to improve feed efficiency, fight disease and enhance growth in turkey, broiler, layer and swine rations. A Level for Every Need—Every Ration a PROFITOPPER!

CHICKENS *(Starter and Grower Rations)*

Penicillin is absorbed into the chick's bloodstream and carried to every tissue and organ in the body. Penicillin is effective against the gram-positive organisms. Many of the bacteria susceptible to penicillin are incriminated in secondary and subclinical infections in young chicks.
Penicillin also has a profound effect on stimulating growth, enhancing effective feed conversions and stimulating feed consumption.

Streptomycin is slowly absorbed from the intestinal tract. It provides "crop-to-vent" protection against harmful, gram-negative organisms. *Streptomycin will not interfere* with the action of beneficial intestinal *flora.*

25 Gm/ton *(18.75 Gm. Streptomycin—6.25 Gm. Penicillin).* Feed continuously to stimulate growth of chicks and to improve feed efficiency.
In presence of disease, recommended rations containing 100 Gm. of PRO-STREP.
100 Gm/ton *(75 Gm. Streptomycin—25 Gm. Penicillin).* The following claims may be listed on your tags when PRO-STREP is fed at high levels to chickens: **a.** Reduce mortality and hasten recovery from C.R.D. **b.** Treat nonspecific infectious enteritis. **c.** Maintain feed intake and weight gains during C.R.D. and nonspecific infectious enteritis. **d.** Aid in maintaining or improving hatchability (of fertile eggs). **e.** Aid in maintaining or improving egg production. **f.** Prevent early chick mortality due to organisms sensitive to penicillin and streptomycin. **g.** Improve feed efficiency as related to egg production or weight gains.
1. Feed the first 10 days—then 3-5 days during, or immediately after, such stress factors as Newcastle disease or bronchitis vaccination, debeaking or housing pullets. **2.** Feed for the first 10 days and then for 3 days out of every week until birds are marketed. **3.** Feed continuously in case of disease outbreaks.

TURKEYS

Penicillin, absorbed into the bloodstream, affords maximum protection in all the tissues and organs of the body against the effects of gram-positive pathogens. Penicillin also is valuable in promoting economical weight gains in poults.

Streptomycin provides "crop-to-vent" protection against gram-negative organisms in the bird's intestinal tract. Slowly absorbed from the intestines, *Streptomycin does not interfere with the action of beneficial intestinal flora.*

25 Gm/ton *(18.75 Gm. Streptomycin—6.25 Gm. Penicillin).* For best results turkeys should be placed on low levels from hatching until they are 16-20 weeks of age. Low-level antibiotic rations will stimulate growth and improve feed efficiency. In the presence of disease, or on farms where the disease level is high, use rations containing 100 Gm. of PRO-STREP.
100 Gm/ton *(75 Gm. Streptomycin—25 Gm. Penicillin).* At this level rations fortified with PRO-STREP will: treat bluecomb and infectious sinusitis; help maintain weight gains during outbreaks of these two diseases; prevent early mortality of poults due to organisms sensitive to either streptomycin or penicillin; help reduce losses following periods of stress such as vaccination, debeaking, chilling, moving, overheating; improve weight gains and feed efficiency in poults even in the presence of disease.

DIVISION · RAHWAY, NEW JERSEY

Do you know about GLYCAMIDE*?

Why not find out about adding GLYCAMIDE to your feeds—a new product of Merck. GLYCAMIDE is the universal coccidiostat for *broilers* and *replacement chicks* for laying and breeding flocks. It is the safest coccidiostat so far discovered.

*Trademark of Merck & Co., Inc. for glycarbylamide.

PRO-STREP

WITH THE MERCK MARGIN OF SURETY

NOW! a ration for and every ration a dual action PRO

Don't sell more antibiotic protection than your growers—turkey, broiler, laying flock or swine—need! Recommend feeds fortified with levels of PRO-STREP designed to produce specific results under varying farm conditions.

Fit the ration to the farm. There is a PRO-STREP level for every ration—PROFITOPPER

	SWINE		CHICKENS *(Layer and Breeder Rations)*	
Penicillin		Penicillin is absorbed and carried through the blood stream to every part of the body to effectively check pathogenic, gram-positive organisms. Penicillin also stimulates feed consumption, enhances weight gains and feed conversion. Grower is able to market more uniform pigs.		Penicillin is absorbed into the bloodstream of the growing or mature bird. It is carried to every part of the body and is effective against harmful, gram-positive organisms. Penicillin is particularly helpful at times of stress in maintaining or increasing hatchability of fertile eggs.
Streptomycin		Effective for prolonged periods of time in the intestinal tract, streptomycin acts against the gram-negative bacteria so often responsible for bacterial enteritis ("necro"). *Streptomycin will not interfere with the action of beneficial intestinal flora.*		Streptomycin is slowly absorbed from the intestinal tract. It provides "crop-to-vent" protection against pathogenic, gram-negative organisms. Streptomycin will not interfere with the action of beneficial intestinal flora.
Directions for Use	**25 Gm/ton** *(18.75 Gm. Streptomycin—6.25 Gm. Penicillin).* Feed continuously to stimulate growth, improve feed efficiency, increase feed intake and promote better uniformity of gains. **50 Gm/ton** *(37.5 Gm. Streptomycin—12.5 Gm. Penicillin).* Feed continuously until pigs are 50-75 pounds to: prevent bacterial swine enteritis; stimulate growth; improve feed efficiency; stimulate feed intake; and help promote better uniformity of gains. If outbreaks of enteritis occur, feeds containing 100 Gm. of PRO-STREP should be used. **100 Gm/ton** *(75 Gm. Streptomycin—25 Gm. Penicillin).* To treat bacterial swine enteritis feed rations fortified with PRO-STREP for 4-5 days or until symptoms disappear. PRO-STREP at the 100 Gm. level also may be used until pigs are 50-75 pounds to: stimulate growth, improve feed efficiency, increase feed intake and assure better uniformity of gains.		**25 Gm/ton** *(18.75 Gm. Streptomycin—6.25 Gm. Penicillin)* Feed continuously as an aid in maintaining or increasing egg production and to stimulate growth and improved feed efficiency. In the presence of disease, rations containing 100 Gm. are recommended. **100 Gm/ton** *(75 Gm. Streptomycin—25 Gm. Penicillin).* The following claims may be listed on your tags when PRO-STREP is fed at high levels to chickens: **a.** Reduce mortality and hasten recovery from C.R.D. **b.** Treat nonspecific infectious enteritis. **c.** Maintain feed intake and weight gains during C.R.D. and nonspecific infectious enteritis. **d.** Aid in maintaining or improving hatchability (of fertile eggs). **e.** Aid in maintaining or improving egg production. **f.** Prevent early chick mortality due to organisms sensitive to penicillin and streptomycin. **g.** Improve feed efficiency as related to egg production or weight gains. 1. Feed the first 10 days—then 3-5 days during, or immediately after, such stress factors as Newcastle disease or bronchitis vaccination, debeaking or housing pullets. 2. Feed for the first 10 days and then for 3 days out of every week until birds are marketed. 3. Feed continuously in case of disease outbreaks.	

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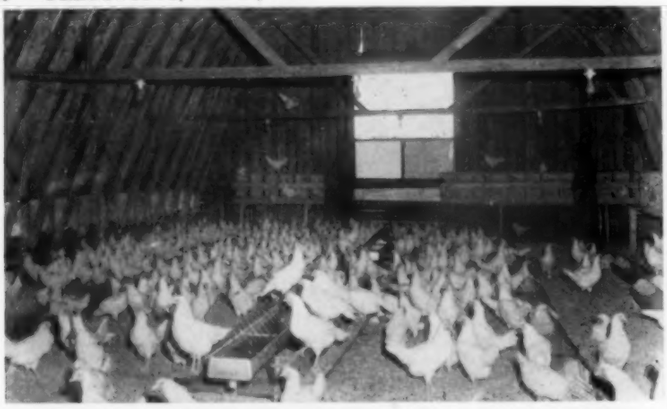
*Trademark of Merck & Co., Inc. for glycarbylamide.



UPPER FLOOR OF CONVERTED BARN—This shows the second floor of the old dairy barn which has been converted into a laying house on the York & Brumit Poultry Farm. Nests are situated along the walls. Some 500 Leghorns are housed on the second floor. Cost of remodeling the barn into a poultry house was far less than building a new layer house providing equal space, the farm owners report.

on feed—if he will follow our plan.

"We insist that feeders be on concrete slabs and the waterers as close to the feeders as practical. And we like to give the hogs enough room in the pen to move around and wallow when they want to."

The program features the "cheapest feed we can manufacture," Mr. Jarvis said. Since milo can be purchased for less than corn, in most instances, the ration is built around that grain. The young pigs, at about 40 lb., are fed a ration of four to one. This is increased to six to one when they reach around 150 lb., and to nine to one until market weights—usually 200 to 225 lb.—are reached.

Farmer Must Adapt

Mr. Jarvis expressed the opinion that the small farmer can survive present-day changes in farming "if he adapts his program to one that can make a profit for him with what he has."

He anticipates further expansion of hog raising in his area which includes several counties in west Georgia and eastern Alabama. Pastures in the area, he said, can stand a lot of improvement before beef raising will be on any sizeable scale, and he said the lack of good grazing has held back dairy farming to some extent.

"We think the small farmer can make a good living with some diversification, such as broilers and hogs, or maybe some good commercial egg flock with some hogs. These farmers need help from the feed man, and we believe that when we work together, we can all make a profit," Mr. Jarvis said.

"Here at the mill, we have no special ambitions to get to be big operators, because we don't think we could be able to give our customers the proper service. And the same holds true for the farmer. When he starts to expand, all the big feed people go after his business. Then we stand to lose a good customer, and he stands to tie himself down because of the additional credit he needs."

Enid Board of Trade Elects Officers

ENID, OKLA. — Claude Lander, Enid Terminal Elevator, was elected president of the Enid Board of Trade at the annual meeting of the organization.

Other officers elected were J. Edward Puckett, Union Equity Co-Op Exchange, vice president; E. R. Humphrey, E. R. Humphrey Grain Co., secretary-treasurer, and Paul T. Jackson, traffic manager, Enid Board of Trade, assistant secretary.

Directors named were B. A. Feuer, Continental Grain Co.; Carl M. Newberry, W. B. Johnston Co.; Joe O. Kocher, General Mills, Inc.; Sam Muir, Enid Terminal Elevator, and Mr. Puckett.

Fryer Commission in Oregon Sets Budget

PORTLAND, ORE. — The Oregon Fryer Commission has established a budget of $55,000 for its operations covering the next 16 months.

The bulk of this money will be spent on promotion, according to B. J. Rogers, commission chairman. No final determination has been made on the employment of an executive secretary.

The commission has established a March 1 assessment date. The assessment on liveweight fryers will be .17¢ lb. and on dressed or cut-up fryers the assessment will be .22¢ lb.

Temporary offices of the commission are in the state agricultural department building.

PURCHASE FEED LOT

LOS BANOS, CAL. — Henry and Lawrence Wolfsen, brothers who reside in Los Banos, and their three sons have announced the purchase of the Wagoner feed lot near Los Banos. The lot will be operated under the name of Wolfsens' Feed Lots, Inc., and will be operated as a commercial yard much as it has been operated in the past.

Now... We are proud to announce another great advance in the fish meal industry...

GUARANTEED ANALYSIS

of MENHADEN FISH MEAL and MENHADEN WHOLE MEAL

Another Development of Haynie Research

you can now buy...

HI-SEAS

Stabilized

MENHADEN FISH MEAL · MENHADEN WHOLE MEAL

(with fish solubles)

with GUARANTEED ANALYSIS of...

OVER-ALL PROTEIN DIGESTIBILITY (pepsin digestibility) and AMINO ACIDS plus GUARANTEED FREEDOM FROM RANCIDITY

Up until this time, the feed industry has not been able to buy Menhaden fish meal on the basis of an analysis of the all-important amino acids. Only protein content could be guaranteed. Today, HI-SEAS is proud to be able to *guarantee* the analysis of every pound of its Stabilized Menhaden Fish Meal and Stabilized Menhaden Whole Meal—for over-all protein digestibility and for individual amino acids.

HERE'S WHAT HI-SEAS CAN GUARANTEE IN EVERY BAG OF FISH MEAL:

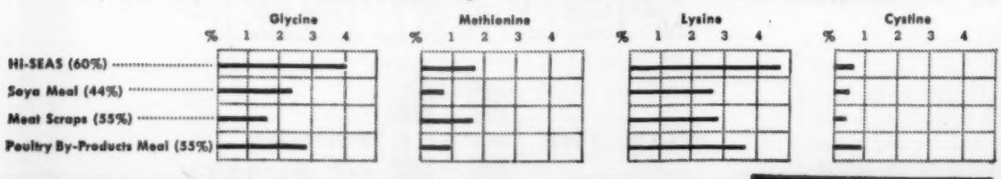
- 92% Over-all Protein Digestibility (pepsin)
- AMINO ACID CONTENT (as % of protein)

6.68% Glycine — 8.00% Lysine
3.00% Methionine — 1.08% Cystine

HI-SEAS... *first in*

Highest Metabolizable Energy Values
Availability of Amino Acids • Fish Growth Factors
Exclusive Anti-Oxidant Process
...*and now* **FIRST *with* GUARANTEED ANALYSIS**

Compare These Amino Acid Percentages with those of other Protein Supplements



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All Vegetable Proteins
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Farm and Feed Salt NEWS

FROM INTERNATIONAL SALT COMPANY, INC.

Feed Manufacturers . . . it's up to you

. . . to Supply Poultry, Swine with Adequate Salt, Trace Minerals

Since poultry get no free-choice salt, and swine get very little, it's important for *feed manufacturers* to add the correct amounts of salt and trace minerals to poultry and swine feeds. The surest way to do this is to mix Sterling Gold Bond Blusalt in poultry feeds, and Sterling Swine Supermix Blusalt in swine feeds. Each of these salt products, properly mixed in your feed, assures the now known correct trace-mineral balance from mill to feed hopper. Your customers benefit from this—and you benefit from their satisfaction.

Sterling Gold Bond Blusalt contains extra manganese and zinc in the correct proportions to guard against leg weakness in chickens and turkeys. To counteract Parakeratosis in pigs, Sterling Swine Supermix Blusalt contains extra zinc in a readily available form. In addition to these manganese and zinc additions, both salt products also contain the now known correct amounts of iron, sulfate sulfur, copper, cobalt and iodine—blended with high-quality salt, the ideal natural carrier.

Guaranteed analyses, plus tables showing just how much Gold Bond or Swine Supermix Blusalt you should add to the many different types of poultry and swine feeds, are available from International Salt Company. Ask your Sterling representative, send a card to International Salt Company, Inc., Scranton 2, Pa., or contact our sales office nearest you.

SELL THESE PROFITABLE STERLING SALT PRODUCTS THROUGH RETAIL OUTLETS

With livestock soon going on spring pasture, the demand will increase for salt products to feed free choice. Retail feed stores can capitalize on this demand by stocking and selling these popular Sterling Farm Salt products.

STERLING BLUSALT: trace-mineral salt for free-choice feeding and for your custom grist mixes. Contains seven trace minerals needed for good growth and feed efficiency (manganese, iron, sulfate sulfur, copper, cobalt, iodine and zinc). In colorful bright-blue bags, 50-lb. blue blocks and 4-lb. blue Liks.

STERLING GREEN'SALT: trace-mineral salt plus 10% phenothiazine for effective low-level control of certain internal parasites. In attractive 25- and 100-lb. green and red bags—for free-choice feeding, feed mixing or to add on top of feeds.

STERLING GRANULATED SALT: pure, white salt for free-choice feeding or feed mixing. In 100-lb. bags. Also pressed into 50-lb. blocks and 4-lb. Liks.

? ? ? DID YOU KNOW ? ? ?

- Chickens can tolerate rather high levels of salt in feed. Even levels of eight per cent were found to be non-toxic over a short period of time. However, do not try to feed this level, since excessive water consumption will result in wet litter.
- **The big spring push is on**—to help retail outlets sell more Sterling Farm Salt products. Sterling ads give helpful hints on livestock management and production and on the proper use of salt for livestock feeding.

Want service with your salt?

You can get it from International Salt Company's Animal Nutrition Department. Located in Watkins Glen, New York, this department does continuing research into the proper use of salt and trace minerals in modern livestock and poultry feeding programs. This is *your department* to consult at any time for advice on your mixing or feed-formula problems, and for information on any of the Sterling Salt products.

INTERNATIONAL SALT CO., INC., SCRANTON, PA.

SALES OFFICES: Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N. J.; Buffalo, N. Y.; New York, N. Y.; Cincinnati, O.; Cleveland, O.; Philadelphia, Pa.; Pittsburgh, Pa.; Memphis, Tenn.; and Richmond, Va.

Service and research are the extras in

STERLING SALT

PRODUCT OF INTERNATIONAL SALT COMPANY, INC.

MEMBER AMERICAN FEED MANUFACTURERS ASSOCIATION

Conversion to

PACAL

HARD FACED HAMMERS

drops grinding costs 39%

A six months test of PACAL Hard Faced Hammers at Chas. Pfizer & Co., Inc., Terre Haute, Indiana, showed substantial reduction in replacement and downtime costs. Netting a saving of 39.3% on overall milling costs. *Why don't you switch to PACAL Hard Faced Hammers too?*

PAPER-CALMENSON and CO.

County Road B & Walnut St. adjoining Highway 36, St. Paul 8, Minnesota. Phone MIdway 6-9456

New Feed Additive For Beef Is Topic at Iowa Feeders' Day

AMES, IOWA—A new feed additive for beef cattle, which so far has resulted in good beef quality, gain increases and feed efficiency in addition to that provided by stilbestrol, will be discussed by livestock nutritionists at the 40th annual Cattle Feeders' "Hey" Day at Iowa State College, Feb. 25.

The new additive, although not expected to be available for commercial use for an undetermined time, is best described as a "hormone-blocking" substance, according to Dr. Wise Burroughs, nutrition researcher at the college. Basic research carried out at Ames by Edmund Cheng led to the uncovering of this new additive, he added. The idea of the new additive developed in several years of basic study of the digestive processes of cattle, which has been underway at the college in an extensive program since the discovery of the successful stilbestrol feeding method here four years ago.

Early trials have resulted in market animals that not only maintained beef quality but at the same time increased gains and reduced feed costs of production. Cattlemen at the feeders' day will see 72 cattle on the second feeding trial with this additive. The first trial has been completed and a third may be starting by the time of the feeders' day, said Dr. Burroughs. The substance shows "considerable promise."

In addition, new methods of feeding stilbestrol which are resulting in superior quality beef, along with the increases in rate of gain and feed efficiency ordinarily expected with stilbestrol, will be reported by the noted nutrition researcher.

Nearly 300 experimental cattle, in all, will be shown at the Beef Nutrition Farm northwest of Ames beginning at 9 a.m., Feb. 25. Reports of experiments will begin in the Iowa State College armory at 10:30 a.m.

C. C. Culbertson will report on feeding trials with high-moisture corn and high-moisture sorghum for fattening cattle. Walter Woods of the college staff will report on the experiments on producing feeder calves in dry lot. He will also report on southwestern Iowa experiments testing the replacement value of corn for brome-alfalfa pasture in pasture feeding of cattle.

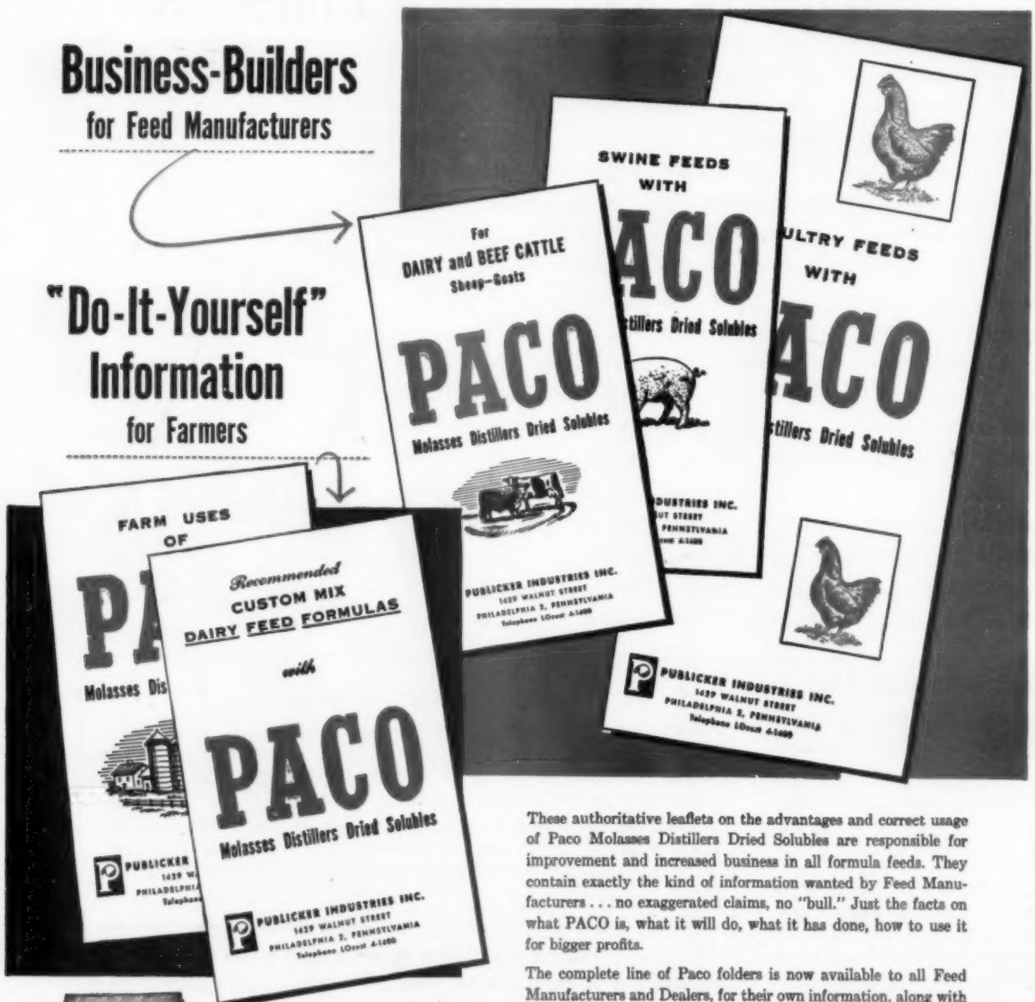
Dr. L. N. Hazel, breeding researcher at the college, will discuss producing a "meat-type" steer.

William B. Palm, Jr.

SALES MANAGER — William B. Palm, Jr., has been named poultry products sales manager for Nutrena Mills, Inc. He will be located at the company's general office in Minneapolis. Mr. Palm, who has been with Nutrena since 1950, was formerly assigned as turkey specialist in contact with hatcheries, growers and dealers in the company's Wichita Falls, Texas, division. He is a graduate of Texas A&M with a B.S. in animal husbandry.

Business-Builders for Feed Manufacturers

"Do-It-Yourself" Information for Farmers



These authoritative leafleta on the advantages and correct usage of Paco Molasses Distillers Dried Solubles are responsible for improvement and increased business in all formula feeds. They contain exactly the kind of information wanted by Feed Manufacturers . . . no exaggerated claims, no "bull." Just the facts on what PACO is, what it will do, what it has done, how to use it for bigger profits.

The complete line of Paco folders is now available to all Feed Manufacturers and Dealers, for their own information, along with other literature to distribute to their customers. If you are not acquainted with PACO and its many advantages as a fortifier and "freshener" for all types of feeds, we will be pleased to send by return mail the data you check on coupon below.

ALSO AVAILABLE IN 50-LB. BAGS

Here is the ideal, fast-selling package for direct sales to farmers and cattlemen.

PACO MOLASSES DISTILLERS DRIED SOLUBLES

A PRODUCT OF PUBLICKER INDUSTRIES INC. ANIMAL FEED SALES DEPARTMENT 1429 WALNUT STREET, PHILADELPHIA 2, PA. PHONE: LOCUST 4-1400

PUBLICKER INDUSTRIES INC.
Animal Feed Sales Department, 1429 Walnut St., Philadelphia 2, Pa.

Without obligation send the following:

Check Here
- ☐ POULTRY FEEDS with PACO
- ☐ SWINE FEEDS with PACO
- ☐ DAIRY and BEEF CATTLE FEEDS with PACO

Folders to distribute to our customers:

Indicate no. desired
- CUSTOM MIX DAIRY FEEDS with PACO
- FARM USES of PACO

CLIP THIS COUPON TO YOUR LETTERHEAD

MIDWEST SALES AGENT—Publicker Alcohol & Chemical Sales Corporation, 101 Arsenal St., St. Louis, Missouri. Telephone: PRospect 6-0858

DEHYDRATED ALFALFA MEAL
Animal Fat Treated
Bulk Bagged Meal Pellets

ALFALFA—MOLASSES
Sun-cured Alfalfa—20% Cane Molasses

ALFA—CANE
Dehydrated Alfalfa - Animal Fat - Cane Molasses

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U.S.I. FEED NEWS®

Vol. V No. 2 ★ A SERIES FOR SCIENTISTS AND EXECUTIVES OF THE FEED MANUFACTURING INDUSTRY ★ February, 1958

Experiments Confirm Essential Nature of Pantothenic Acid

Pantothenic acid was recently shown to be a limiting factor in the synthesis of vitamin C in experimental animals. The precursors of vitamin C (glucose cyclo-acetoacetate and glucuronic acid) were not converted to vitamin C unless sufficient pantothenic acid was available.

In another experiment at a western college agricultural station, it was confirmed that pantothenic acid and riboflavin are limiting factors in the growth of weanling pigs. Many of the important B-vitamins were not utilized for maximum growth until riboflavin and pantothenic acid levels were increased.

U.S.I. sells the calcium salt of pantothenic acid in both D and DL forms.

Bacitracin, Penicillin Found Best for Swine

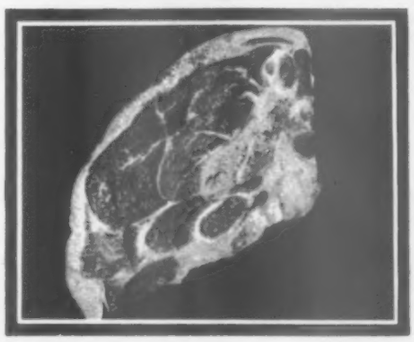
In a recent swine feed research program, antibiotics and other growth stimulants were included in the rations of several lots of pigs. Results of the experiments show that the swine which received a combination of penicillin and bacitracin increased growth by 9.1% as compared to controls. This was in marked contrast to results obtained from use of all other supplements, where growth was increased by a maximum of only 5.2% over the control group.

U.S.I. offers both procaine penicillin and bacitracin supplements. Both are economical, offering protection at a fraction of the cost of other types of antibiotics.

MOREA®-Fed Lambs Outperform Others In Midwest Lamb Day Competition

MOREA Gives Better Flavor and Meat Quality at Less Cost

Demonstrations at a leading midwest university, under the supervision of a well-known meat packer, again show that MOREA-fed lambs cost less to raise than those fed in the conventional manner. Yet these MOREA-fed lambs graded out with more primes than any other group. They had well-meated carcasses with whiter fat. The fat was not wasty, and the average thickness was less than on conventionally-fed animals.



Typical loin chop section of U. S. Choice MOREA-fed lamb. Note large, meaty chop with minimum cover fat.

Previous taste panel tests have shown that lamb from MOREA-fed animals has a superior flavor, not often found in meat from lambs fed ordinary rations.

MOREA shows other advantages

The lambs fed Morea supplement made 17% higher gains than lambs fed the packer's standard ration. The profit margin per lamb was the highest — 32¢ above the standard ration. MOREA-fed lambs consumed more roughage and less grain concentrate. They ate much more hay, much less corn and protein supplement. Their total feed intake was also higher, indicating a better nutritional status.

As with lambs, MOREA-fed beef cattle show outstanding carcass qualities: small cover fat, tender meat and more desirable dressing characteristics. Another advantage is that MOREA can be fed free-choice to ruminants during any stage of development, at any time of the year. Handling costs are substantially lower.

U.S.I. Expands MOREA Distribution

U.S.I. will sell a concentrated MOREA premix to authorized mixer-distributors who are currently being appointed. The market area includes most states east of the Mississippi and west of the Continental Divide.

Methionine Overcomes Urinary Infections

Large doses of methionine have cleared up stubborn urinary tract infections which are resistant to antibiotics or other therapy, according to experiments at an eastern medical school.

Upon oral ingestion, methionine acted as a urinary acidifier, and reduced both the pH and the bacterial count of the urine. After methionine intake, the urine contained an antibacterial substance, not present before methionine was given.

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- U.S.I. VITAMIN B_{12} SUPPLEMENTS
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- U.S.I. CUSTOM MIXES
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- U.S.I. CHOLINE CHLORIDE (25% dry or 70% solution)
- MOREA® PREMIX (for ruminants)
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Reproduced above is the FARM NEWSREEL display streamer. Actual size, 18¼" by 8½". Get FARM NEWSREEL streamers and display cards from your Cyanamid representative or your TV station carrying the program. Put them up. Display them. Your customers will be interested!

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Dairy Feeding Reviewed at ADA Forum

COLORADO SPRINGS, COLO.—Ways to develop greater consumption of dehydrated alfalfa by dairy animals were explored by three speakers who appeared on a "feeding forum" at the American Dehydrators Assn. convention here.

Presenting talks summarized below were a college researcher, a feed company research director and a dairyman. (Summaries of talks on use of dehydrated alfalfa for other types of livestock appeared on page 4 of the Feb. 15 issue of Feedstuffs.)

DAIRY: Can dehydrated alfalfa be used to replace part of the grain in a milk cow ration, and what is its supplemental value to other roughages, particularly poor quality roughages, in feeding milk cows?

These were questions explored by Dr. E. E. Bartley, animal husbandry department, Kansas State College.

Reporting on recent Kansas tests, he said it was found that the use of dehydrated alfalfa in pelleted form was of value when small amounts of pellets were included in the roughage fed the animals. The combination encouraged cows to consume more total roughage and thereby enhance milk production, he said.

When the roughage consisted of 17% dehydrated alfalfa pellets in the amount of 0.5 lb. per 100 lb. body weight and 83% alfalfa hay and sorgo silage, the cows consumed 3.6 lb. more hay equivalent per cow per day. This resulted in an increase of .8 lb. more 4% fat-corrected milk per cow daily.

In another Kansas experiment dehydrated alfalfa pellets were fed with poorer quality non-leguminous roughages. When the roughage consisted of 17% pellets and 83% non-leguminous roughage, the cows consumed 4.4 lb. more hay and produced 1.2 lb. more 4% fat-corrected milk.

Connecticut and U.S. Department of Agriculture workers more recently reported on an experiment comparing three levels, 0.5, 1.0 and 1.5 lb. per 100 lb. live weight per day, of artificially dehydrated and pelleted alfalfa fed as a supplement to timothy-grass mixed hay. At the 0.5 lb. level (equivalent to about 20% of the roughage) the cows produced 2.9 lb. more 4% fat-corrected milk daily. At the 1 lb. level (equal to about 34% of the roughage) 6.7 lb. more milk was produced, and at the 1.5 lb. level (equivalent to about 48% of the roughage) an increase of 7.7 lb. milk resulted. Total hay equivalent consumed increased with increasing levels of dehydrated alfalfa pellets fed.

Dehydrated grasses and legumes may be used to replace part of the grain for milk cows, but such replacement can be expected to cause some loss in production, he said. Use of dehydrated alfalfa for this purpose depends on its price and the price for grain.

In calf starters, he said, dehydrated alfalfa has made a place for itself as a source of carotene from the times the calves are weaned until they consume 2 to 3 lb. of green, leafy hay. A new development in calf feeding, however, is the addition of large amounts of roughage to starters. This is based on the premise that calves usually prefer starter to hay, and thus may be encouraged to eat more hay earlier by incorporating it in the starter. Tests show that acceptable growth has been attained in calves receiving a starter containing 25% dehydrated alfalfa, he said.

More Research Needed

Dr. H. Ernest Bechtel, director of General Mills' Larro Research Farm, Indianola, Iowa, pointed out that dehydrated alfalfa has not yet found a successful and secure place of importance tonnagewise in dairy rations, either for young calves or older animals.

"The only answer," he said, "is more research—such as that now under active sponsorship by the ADA."

He recommended further appraisal of dehydrated alfalfa in dairy rations from several standpoints. These should include protein, carotene, minerals, unidentified factors, complementary factors, texture, palatability, energy, food fortifying qualities and economy. These must be reckoned with if the optimum amount of dehydrated alfalfa that might be used in a dairy ration—in preference to other established sources—is to be determined, he said.

Dr. Bechtel pointed out that there are unidentified ash factors which exist in alfalfa and which are emerging as essential nutrients for the rumen microflora involved in roughage digestion.

"These and other factors in the alfalfa well may have complementary or associative values whereby they enable the ruminant to derive more value from the remainder of the ration," he said.

Texture is also important, he added. It is now recognized that fine grinding of roughage is not desirable in dairy rations—especially when combined with feed high in digestible starch.

The carotene level in a dairy ration is known to affect the carotene content of the milk. Dr. Bechtel said this suggests that the feeding of dehydrated alfalfa to milking cows may be useful in fortifying market milk not only with extra nutrients of value in the human diet, but also with materials that enhance flavor and wholesomeness at a time when these qualities are of increasing concern to operators of pipeline installations and other equipment where sanitation requires extra management measures.

"Dehydrated alfalfa at almost any reasonable price can be wise economy when used at small percentage levels to supplement the ration with certain unique and unidentified factors," he said.

He pointed out, however, that since finely-ground roughage appears to remain too short a time in the rumen to exert full effects, more attention

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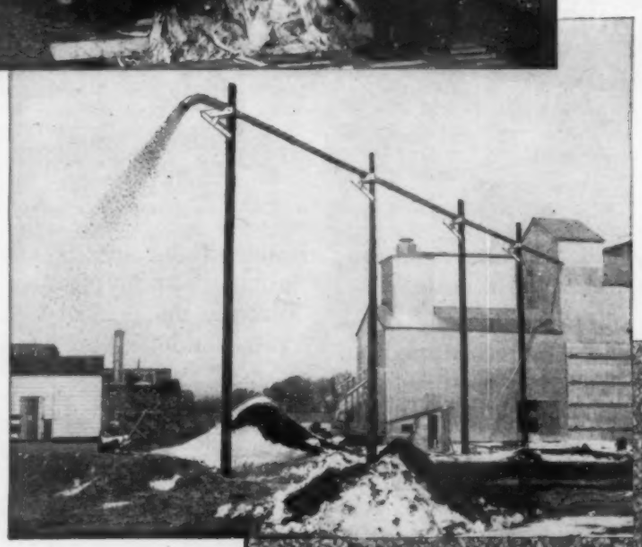
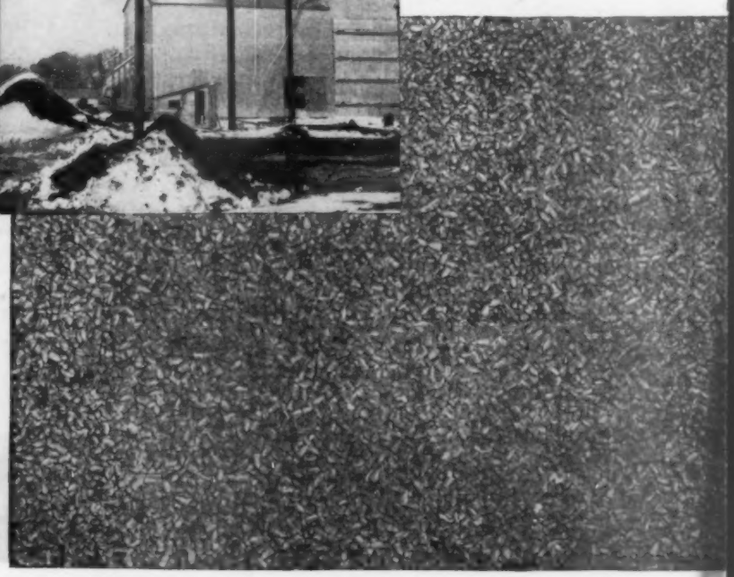
"SHELLS CORN SLICKER, QUICKER, CLEANER"..

Sam Wise, Altoona Elevator, left and Lloyd Hall, R.F.D. #1, Altoona, Iowa start a load of corn through the Bryant #30 Sheller.



Cob and shucks are blown 65 ft. vertically, and 165 ft. horizontally by Bryant #30 Sheller with high power Blower. Cob pile is good safe distance from elevator, reducing fire hazard to minimum, simplifying clean-up.



Unretouched photo of shelled corn from Bryant #30 Corn Sheller. Note absence of shuck bits and foreign matter in Lloyd Hall's load.

should be directed toward texture studies. "It is entirely possible," he said, "that the overall value of dehydrated alfalfa supplements can be increased appreciably merely by devising some way of getting the ingredient to remain longer in the rumen of the cow."

He said it is also possible that a low level of dehydrated alfalfa will provide the means whereby calf rations can be better fortified with nutrients now present in marginal amounts in the average quality roughage fed many young animals.

Looking at the value of dehydrated alfalfa from the point of view of the dairyman was Joe S. Willett, Sinton Dairy Farms, Colorado Springs.

His dream, he said, is a supply of dehydrated alfalfa in the proper physical condition to blend half and half with alfalfa hay.

"The digestive efficiency of alfalfa is greatly reduced when the product is ground too fine," he said. "What I need from you people is a product chopped one half inch or more, that will keep in storage and can compete favorably with sun-cured in cost per unit of food value. I have been told this is not economically possible, but I think someone eventually will come up with the answer."

He said the concentrate or grain portion of the cow's ration has many times been over-emphasized as the major factor in milk production.

"I look at the cow's grain as a way to give her the extra energy necessary for high milk production," he said. "Her breeding and the stimulating factors delivered in high quality roughage make her give milk, and a good cow draws her body reserves right down unless extra energy is added in the form of grain."

The Sinton farm has been operating as a milk producer for 72 years, he said, and its herd of Holsteins in 1957 had averages of 426 lb. of butterfat and 11,652 lb. milk. An average of 280 cows is milked.

While satisfying the several requirements of a dairy herd, he said, the feeder must always strive for economy. About 50% of the total gross income of a dairy operation goes for feed. This means the feeding program must be flexible to enable the feeder to use a large number of feeds.

The roughage portion of the ration is by far the most important, Mr. Willett said. He pointed out that summer roughage programs are going through radical change. With field harvesters the pasture is being delivered to the cow, and the result has been a flattened production curve and an extension of high milk production later into the fall.

But when the green feeding ends the problems begin, he said. Cows tend to dry up for the winter. Alfalfa hay is the backbone of the winter ration, but to improve its quality one or more of the common stimulators, such as dehydrated alfalfa, are needed.

Since the quality of the hay plays such a big part in the dairyman's success, he is always alert to any way he can get higher quality. It is for this reason, Mr. Willett said, that dehydrated alfalfa as a roughage would be far more valuable than dehydrated alfalfa as a supplement.

Gordon Rice

SALES MANAGER — The appointment of Gordon Rice as sales and promotion manager for Bow-Key Feeds has been announced by Howard Boeke, president of the Boeke Feed Co., Inc., Des Moines. In his new position, Mr. Rice will be in charge of the sales organization, public relations at the company's test farm at Ankeny, Iowa, and developing an extensive advertising and promotional campaign. He has spent 15 years with the Ford Motor Co. in sales and advertising work. Mr. Rice has appointed Dale Lindstrom, Marshalltown, Iowa, as northeast supervisor for Bow-Key Feeds.

Early Planning Urged For Alabama Meeting

BRUNDIDGE, ALA. — Feed men who plan to attend the Alabama Feed Assn.'s second annual Nutrition Conference at Alabama Polytechnic Institute Oct. 23-25 are urged to make reservations early, said Merlin T. Bryant, Brundidge Milling Co., chairman of the program committee.

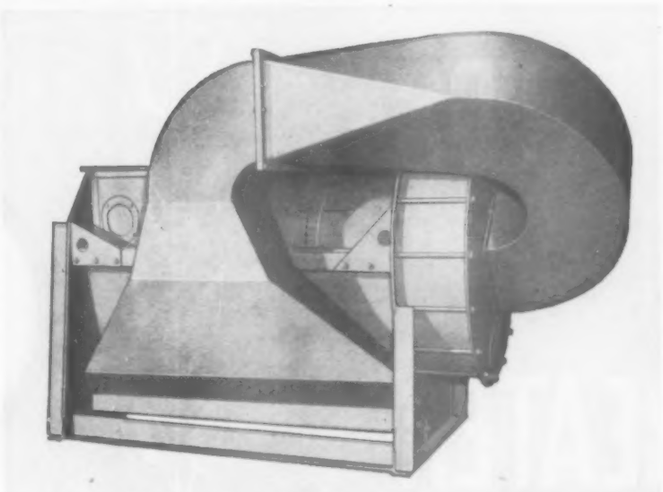
The reason is that the annual football game between Auburn and the University of Maryland will be played at Auburn Oct. 25. He points out that managers of several motels near Auburn say they already are booked to capacity for those days.

Jack A. Willis, Jr., Dies Unexpectedly

KANSAS CITY—Jack A Willis, Jr., 65, former general manager and vice president of the Ismert-Hincke Milling Co., died Feb. 11 at his home here. Mr. Willis retired two years ago, after having been associated with the firm since 1937. He is survived by his widow, and a brother, Ben, Ames, Iowa.

Says Sam Wise, Altoona Elevator, Altoona, Iowa

"Our BRYANT No. 30 has shelled 1600 bushels an hour, increased our business and put an end to our shuck and cob pile problem."



"We always had a cob, shuck and dust problem around the elevator when we had a custom sheller come to the mill," explains Sam Wise.

"But our Bryant No. 30 sheller has sure changed that. As you can see from the pictures enclosed the powerful Blower on our Bryant is lifting cobs and shucks 65 ft. vertical and 165 ft. horizontal.

"This Bryant is the slickest, most trouble-free corn sheller we've ever seen. Just 1 shaft, 2 bearings, one motor. We've had no maintenance in over 7 months of operation.

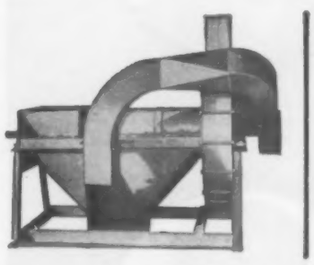
"Farmers appreciate the speed with which corn can be shelled and we have increased our grinding business as a result. We put in a crusher feeder ahead of the sheller. This breaks up the cob, increases capacity and keeps rock and tramp iron out of the sheller.

"As for clean corn, your true aspiration system is even better than advertised. We had a load of water-soaked, dirty corn some kids picked up from a field. Every bit of foreign material was taken out of it and the Bryant shelled it as good as dry corn."

FACTS ABOUT BRYANT #30 CORN SHELLER

Capacity (machine-picked ear corn)—800 to 1000 bu. per hr. Speed 805-875 R.P.M. 30-40 H.P. Cob pipe diameter — 12". Custom engineered with several Blower sizes available. Standard Blower will blow cob and shucks up to 140 ft. Special High Power Fans will carry cob and shucks up to 300 ft. Large air trunk runs from eye of Blower to shelled corn discharge point. Shelled corn is cleaned by "true Aspiration" along entire shelling cylinder.

Write/Wire/Phone for Brochure and Specifications

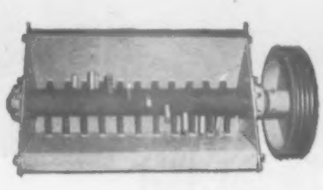


BRYANT #20 CORN SHELLER

400-600 bu. capacity per hr. 1000 R.P.M. Compact design, rugged construction low maintenance. Standard Blower handles cob and shucks up to 100 ft. 20-25 H.P. 9" cob pipe. Air-sweep cleaning removes foreign matter.

BRYANT #10 CORN SHELLER

Capacity 150-200 bu. per hr. 700 R.P.M. 7½-10 H.P. 6" cob pipe. Ideal for smaller feed mills. Rugged, durable. Available with or without crusher.



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DR. NORMAN JACOBSON
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Prof. of Poultry Husbandry and Biochemistry and Nutrition, Texas A & M College
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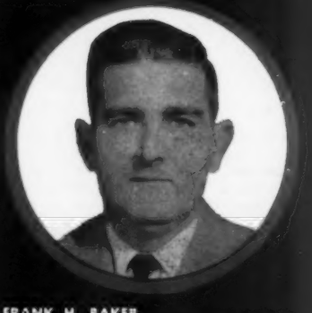

DR. FRANK H. BAKER
Prof. of Animal Husbandry, University of Kentucky
"Distillers Feeds and Nutrient Availability of Roughage Rations for Ruminants"

DR. J. K. LOOSLI
Prof. of Animal Husbandry, Cornell University
"A Comparison of Corn Distillers Dried Grains, Brewers' Dried Grains and Urea as Protein Supplements for Dairy Cows"

DR. T. D. RUNNELS
Prof. of Poultry Husbandry, University of Delaware
"Effective Levels of Corn Distillers Dried Solubles in Practical Poultry Diets"

DR. CLIVE M. McCAY
Prof. of Animal Husbandry, Cornell University
"Reproduction of Beagles Fed Commercial Feeds Containing Corn Distillers Dried Solubles"

DR. LLOYD D. MATTERSON
Prof. of Poultry Husbandry, University of Connecticut
"Observations on Protein and Energy Relationships for Broilers"

DR. DAMON CATRON
Prof. of Animal Husbandry, Iowa State College
"Feeding Swine the Modern Way"

DR. LAWRENCE E. CARPENTER
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Speakers At —

Distillers Feed Conference — March 12

Need for Farm Public Relations Program Stressed

LITTLE ROCK—The needs for a strong public relations program for a changing agriculture were pictured at the 55th annual convention of the Association of Southern Agricultural Workers here Feb. 3-5.

More than 1,000 farm workers from 31 states attended. They represented both government agencies and private agriculture and industry.

In addition to general sessions, meetings were devoted to agricultural economics and rural sociology, agricultural editors, engineering, agronomy, animal husbandry, dairying, forestry, home economics, horticulture, marketing, phytopathology, plant physiology, poultry and 4-H work.

(Nutrition reports are reviewed elsewhere in Feedstuffs.)

The first general session was opened by Lippert S. Ellis, dean of the College of Agriculture, University of Arkansas, Fayetteville, association president. Speaking on "A Changing Agriculture," the dean said that American farmers, caught in an ever-tightening cost-price squeeze, must take their case to the public.

Changing American agriculture has been marked by declining farm population, increased mechanization, trend toward larger farms, increasing importance of the management factor in modern farming, along with the expanding use of agricultural technology, Dean Ellis said.

He added that this picture of agricultural change in the U.S. leads to the inevitable conclusion that there is a need for:

1. A realistic public relations program that will interpret agriculture to the public in general.

2. Agricultural groups to work together to achieve a sound national program for agriculture that will give farmers adequate bargaining power in an economic society dominated by big business and big labor.

3. Recognition on the part of organized groups that the strength of agriculture today lies, not solely in the number of farm votes, but in the extent to which the membership of organized groups is well informed and able to speak intelligently on farm problems.

Dean Ellis stated that a strong public relations program is needed because "the consuming public needs to recognize that the efficiency of the American farmer has increased greatly. The consumer has been the beneficiary of that increased efficiency.

"The consuming public needs to recognize that the prices received by farmers have not been wholly responsible for the prices which have been asked at the retail level.

"The consumer also needs to appreciate the severe problem facing farmers since 1952 in the cost-price squeeze. While the farmer has been faced with generally declining prices and increasing costs, he has received a declining proportion of the dollar paid for food at the retail level. Consumers need to recognize that an hour of non-farm labor will generally buy more food now than it would a few years ago."

Opening the second general session, Dr. Raymond W. Miller, president, Public Relations Research Associates, Inc., Washington, D.C., said American agriculture will undergo even greater changes in the years ahead.

Speaking on "Public Relations for a Changing Agriculture," Dr. Miller said, "We believe that during the last half of the 20th century the South will become more and more industrialized, but if the constructive minority within agriculture will face the issues, bow with the wind, still keeping their feet in contact with the soil, it will bring forth here an agricultural-industrial development that will not only be of benefit to the nation but perhaps will also be a pattern for other lands as well.

"We must recognize that agriculture is no longer a full-time operation for more than a very small percent of the people, and yet the lure of the soil and the freedom of the countryside are still there. We can no longer compartmentalize agriculture as a segment of the community—agriculture is a part of the community," he said.

"If the farmer wants to go on and ignore the city and the village and the small town as being a part of his life, he can do so; but the facts are that he is more and more dependent upon service agencies provided by non-farmers. The farmer had better get interested in the problems in the village as well as with his own. Agriculture, as such, is getting to be a minority group in the nation's economy. It is still, and always will be, the most important—for food, and for the 'seed bed' of leaders of the future. But it had better keep its self-adulation to itself."

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Lime Crest trace-mineral pre-mixes are made under rigid laboratory control. You can use them with full assurance that they will always put into your feeds what they are supposed to put there. *You* are protected by *our* laboratory control . . . and our research.

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Speaker Predicts Further Integration For Turkey Industry

EAST LANSING, MICH. — The turkey industry can expect continued integration, L. A. Wilhelm of the Quaker Oats Co., Chicago, predicted at a Farmers Week meeting in East Lansing.

"Due largely to its capital requirements per turkey and originally to the seasonality of production, the turkey business started integrating long before the broiler business," the speaker said.

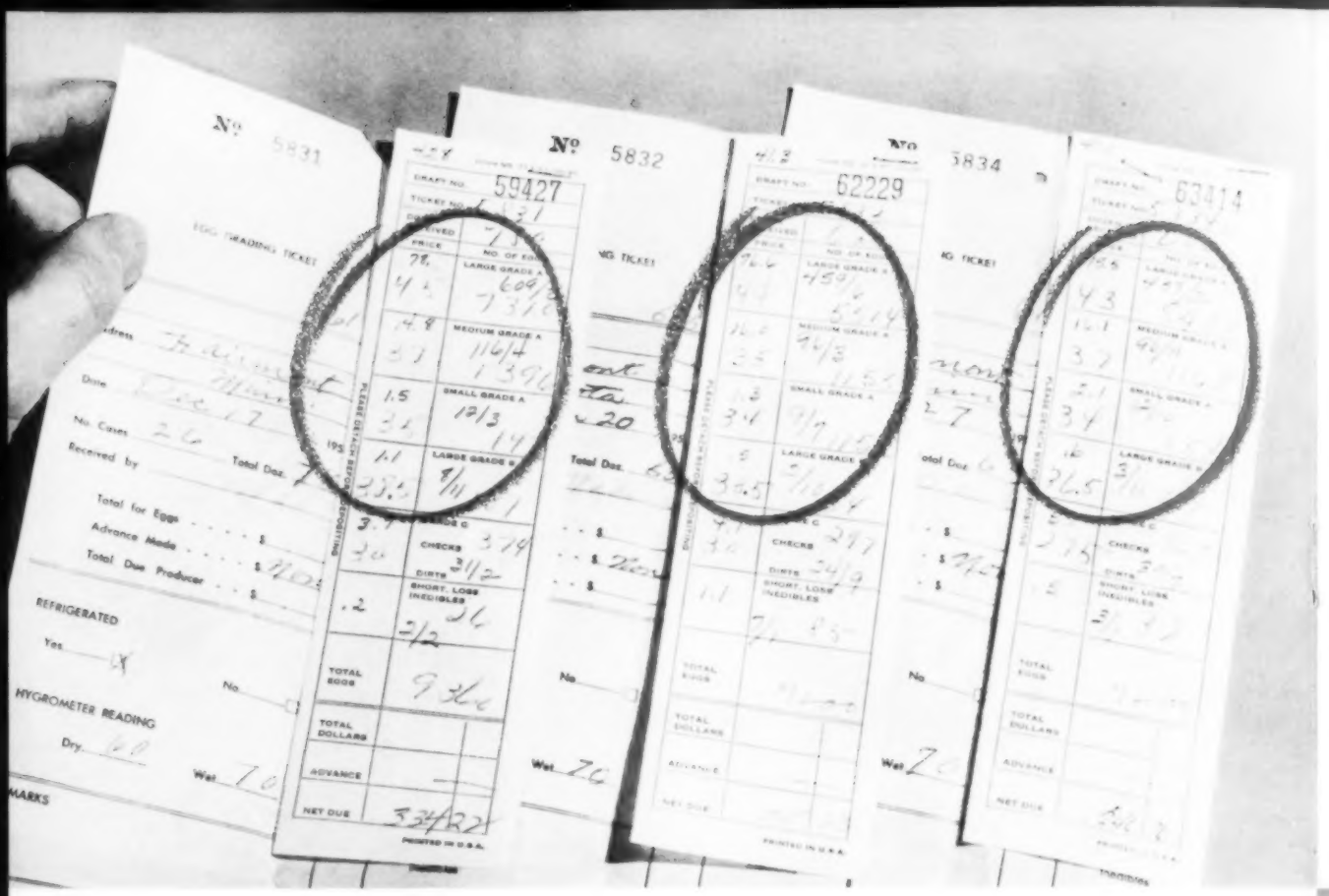
"Many of the steps taken to date in the turkey industry have been responsible for the continued expansion year after year while profits per bird and cost per pound to consumers have not expanded," Mr. Wilhelm continued.

He said agriculture has been slow to recognize that modern operations require more capital than those of 25 or 50 years ago.

"The turkey business is fast recognizing the necessity of automation, mechanization, large scale production and the general substitution of capital for both labor and land," Mr. Wilhelm pointed out. "Successfully applied, the principles of integration make possible greater specialization of labor, better use of top management, more efficient use of labor and capital, uniform production and better quality."

How about integration and the "independent" farmer? Mr. Wilhelm explained that in an integrated turkey business, the farmer may pass on market and production risks to the integrator in return for a contract price for his capital investment and labor.

"The very efficient 'independent' will succeed, but he may in the end have to expand and integrate to remain competitive," Mr. Wilhelm concluded.



Maxi-Lay Cage Queen eggs average 93.9% Grade A; over 77% large even though replacements were added each month! Above you see the actual grading slips for 23,760 Maxi-Lay Queen eggs. The totals from the three slips average out to 93.9% Grade A, over 77% large. And look at the prices paid! Because these figures include replacements, they give you an indication of the production you can expect from a cage operation on a year-round basis.

Farm tests show 10½-month-old MAXI-LAY QUEENS average 86.9% large eggs, 96.7% A or AA

More than five years of testing and breeding, involving over 100 top strain crosses, has produced a great, new bird—the Maxi-Lay Queen. This revolutionary, light-weight layer gives you the large eggs that bring better prices. It has a high persistency of lay. Consumes much less feed.

23,208 out of 24,000 eggs Grade A or better! In actual farm production, 24,000 Maxi-Lay Queen eggs from different poultrymen were shipped 1,200 miles to a buyer. He graded 86.9% large, 96.7% AA or A. This means that 23,208 out of the total 24,000 eggs were Grade A or better. The Maxi-Lay Queens that laid these eggs were only 10½ months old. They were fed on a recommended Pillsbury feeding program.

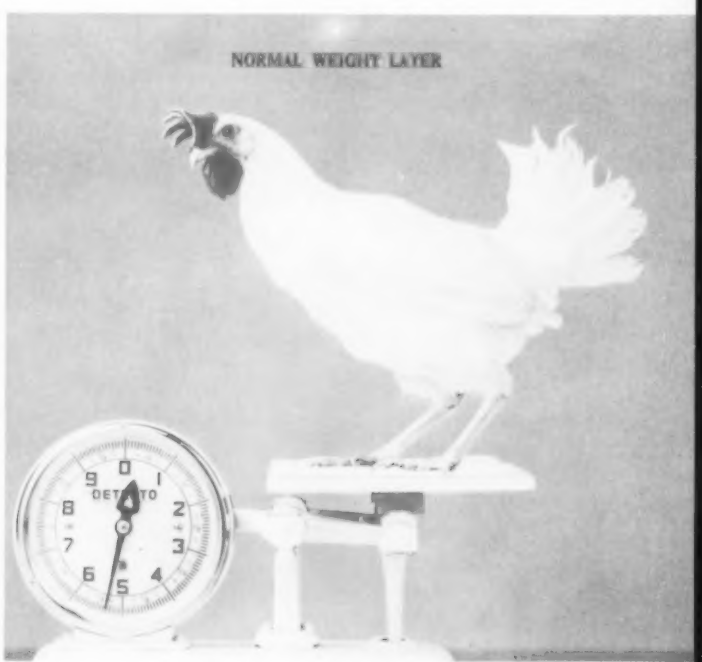
Bred to give larger eggs, high production from start! Maxi-Lay Queens are bred to lay very few pullet eggs. They're also bred to start laying around 5½ months of age—average 75% production the next four months. At eleven months, Maxi-Lay Queens should produce eggs that average 26 ounces per dozen. High persistency of lay is vital to egg profits. Maxi-Lay Queens have proved themselves in this important factor. Accurate records from commercial egg farms have shown production of 246 eggs per bird per year based on HENS HOUSED.

Save up to 13½ lbs. of feed per year! The new Maxi-Lay Queen weighs about 4 lbs. Average layers in the U.S. range from 4½ lbs. to 5½ lbs. American Feed Manufacturers figures show that one pound difference in weight equals a saving of about 9 lbs. of feed per year per bird. Result: This can mean a saving of from 4½ lbs. to 13½ lbs. of feed per year per bird.

Call your Pillsbury Feed Dealer! New Maxi-Lay Queen chicks are sold exclusively through Pillsbury Feed Dealers and authorized hatcheries. They've been bred to two different sizes. A 4-lb. bird for cage flocks (C-4-26). A ¼-lb. larger bird for floor flocks (F-4-26). Both give you top quality production. Phone your Pillsbury Feed Dealer now for more information on this great, new layer.

Larger eggs! At left, you see six eggs from Maxi-Lay Queens. They average 26 ounces per dozen. They're about four ounces heavier than the eggs from the good commercial layer at right. Think how much extra profit you'd make if you were getting larger Maxi-Lay Queen eggs every day!

Weight difference saves about 39¢ in feed per bird per year! This Maxi-Lay Queen weighs only 4 lbs.—compared to the 5¼ lb. commercial layer. AFMA figures show that it will consume around 11¼ lbs. less feed per year. Figuring $3.50 per 100 lbs. for mash and grain, this will mean a saving of 39¢ per year. Almost enough to pay the cost of a replacement chick.



Pillsbury MAXI-LAY QUEENS Feeds

NOW... A WAY TO SAVE MORE CHICKS, START 'EM FASTER THAN EVER!

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Just look how these Maxi-Lay Queen chicks go for this new, improved Pillsbury Chick Pre-Starter Hp25!

New, improved Pillsbury Chick Pre-Starter Hp25 now has 25% protein, new high energy and vitamin levels

Your baby chicks need extra protein, energy and vitamins to help them safely through the first few weeks. Now there's a feed that gives it to them. New, improved Pillsbury Chick Pre-Starter Hp25.

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In addition, new improved Pillsbury Chick Pre-Starter Hp25 helps protect your chicks against disease with powerful, fast-acting antibiotics. Gives them improved resistance to stress with new, high vitamin levels. Provides extra minerals for sturdier bones.

Why take chances on your chicks this year? You *know* new, improved Pillsbury Pre-Starter Hp25 will deliver safe, fast growth. This greater growth and vitality builds a strong base for either Timed Egg Production (restrictive feeding) or for early production. Pick up a supply of Pillsbury Chick Pre-Starter Hp25 at your Pillsbury Feed Dealer's soon.

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go get new, improved

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MAXI-LAY QUEEN

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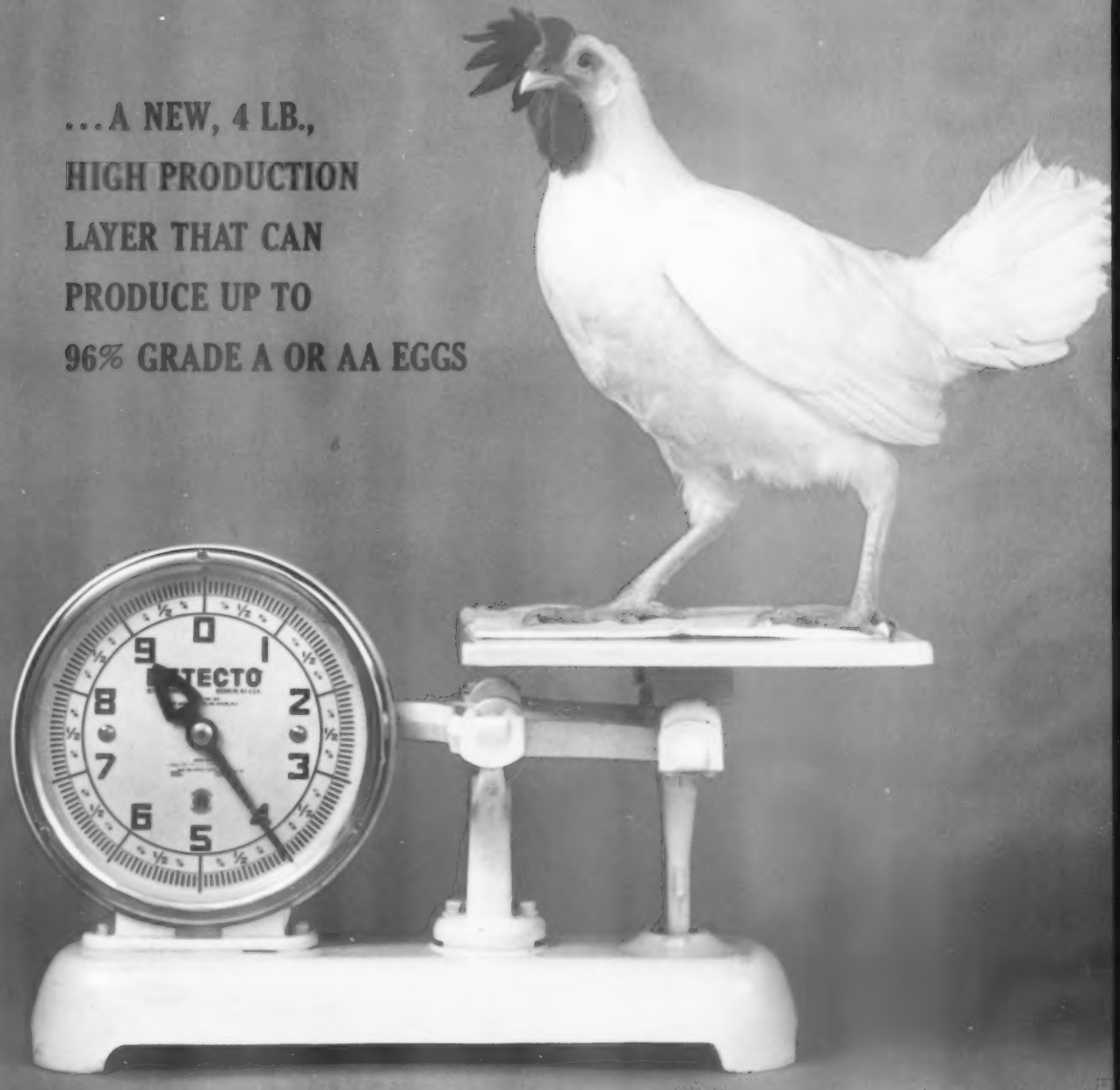

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Corn Borer Loss Totals $158 Million

WASHINGTON—The U.S. Department of Agriculture has estimated the European corn borer in 1957 destroyed almost 181,000,000 bu. of corn worth $158,841,000.

This loss amounts to about 6%—or one corn row in every 17—of the total national crop of more than three billion bushels. It is almost 85% higher than the 98,000,000-bushel loss charged to the insect in 1956.

The insect damage last year was the third highest in the past nine years.

Iowa, Nebraska, Missouri, South Dakota and Illinois sustained heaviest losses, the department said. The monetary losses by states included: Iowa $86,840,000; Nebraska $17,499,000; Missouri $16,562,000; South Dakota $11,773,000; Illinois $11,085,000; Minnesota $7,288,000 and Indiana $1,498,000.

Western Ranges, Cattle Condition "Best in Years"

LINCOLN, NEB.—Western range feed was reported Feb. 1 to be in its best condition for the date in several years, the Nebraska State-Federal Division of Agricultural Statistics has reported.

The condition was estimated at 81%, down 1% from last month, but much better than the 61% reported last year and the average of 73% for the date. Range and pasture feed conditions in the West for Feb. 1 have been exceeded only once in the past 25 years, the report said.

Mild temperatures plus light, intermittent snow cover, have allowed above average utilization of range forage, stubble fields and winter small grain pastures. On Feb. 1, most of the main winter range was open to grazing. Full feeding of roughage was largely confined to the higher elevations and the north country west of the Divide, according to the report.

Moisture has generally been adequate to soften dry feed, maintain winter small grain and supplement stock water supplies. A few dry areas were reported in the Southwest, but soil moisture conditions promise excellent early spring grazing, the report said.

The important winter small grain pasture areas of the central and southern Plains have provided abundant feed. In most instances the available pasture exceeds requirements of present livestock numbers, according to the report. Present moisture conditions indicate a large surplus of small grain pasture this spring throughout the Plains area.

Favorable grazing conditions have reduced the level of supplemental feeding. This, combined with low hay and concentrate prices, has enabled ranchers to cut wintering costs well below last year's level.

The condition of western cattle is also improved over a year ago. The Feb. 1 report was 85%, compared with 75% last year, and an average of 80%. Mild, open weather and abundant feed have held cattle at the best Feb. 1 condition since 1943. Reports from farmers and ranchers indicate that cattle are showing less than half the usual seasonal shrink. Losses of early calves have also been kept at a minimum with the mild weather.

"There is little probability of the forced liquidation of range cattle from any western area this winter or spring," the report stated.

Condition of sheep and lambs was reported at 86%, compared with 77% a year ago, and an average of 81%. The 86% rating is the best for the date since 1942.

Early lambs in Texas, Arizona and California are making good gains. The first confirmed contracts for California fat springers call for late March and early April delivery. Early lambing is well along in Idaho, Washington and Oregon. Favorable weather has allowed a high percentage of lambs saved.

There is an abundant supply of winter grass and weeds in the main Texas sheep country, and the spring movement of carryover lambs is expected to be earlier than usual, the report said.

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For Multiwall Bag Buyers

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1 Is your bag correctly sized for your product?
2 Is your bag properly constructed for your product?
3 If loss of product is caused by deterioration, would special protective sheets help to reduce such loss?
4 Is the total cost of your bag out of proportion to the selling price of your product?
5 Does your product cost warrant redesigning your bag to merchandise your product more effectively?
6 Are you using the most economical filling machine available for packaging?
7 Are your current suppliers giving you the service you desire?
8 Are your suppliers integrated and capable of maintaining dependable service at all times, under all conditions?
9 Are your suppliers' representatives qualified to help you with your packaging, sales promotion and marketing?

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Foundations for the two new Consolidated Blenders' processing and storage plants at Guntersville, Ala., and Nebraska City, Nebr., are in on schedule. This means that May 1 is still the target date for full-scale operation at both points.

By that date, Consolidated Blenders' 3-plant network will avail all areas of the nation the promptest service possible for receiving supplies of Merry-Mixer dehydrated alfalfa greenules. It will also preclude shortage of supply, a possibility foreseen by the increased use of Merry-Mixer products as feed supplements.

Guntersville will supply the entire southeastern feed market while Nebraska City will offer reserve strength to the home plant at Fremont, Nebr., in meeting demands from the steadily growing midwestern and western market areas.

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Increased Forage Seen As Solution to Surplus

CHICAGO — American farmers need to put more land into hay and pastures and raise less food crops and feed grains if they are to solve the surplus problem and preserve soil fertility for the needs of coming generations, a University of Minnesota agronomist said here recently.

Dr. W. M. Myers said that diverting more acres to grass would mean more beef production, since forages can't be used to any great extent for pork or as food crops. This, he said, would result in less total food from each acre eventually reaching the supermarket.

Such diversion "would be a powerful tool in bringing production and consumption back into balance," Dr. Myers stated. "Government agricultural programs could be designed that would accomplish this objective."

Dr. Myers, who is head of the university's agronomy department, spoke at a Feed & Seed Industry Research conference. He said a shift to more forages is also necessary to conserve and improve soil, to allow for changing eating habits of American people and to provide more meat at less cost.

He said that surplus food, feed grain and cotton crop acres need to be used for other crops. But he added that since there are no new industrial crops in sight with great potential use, forage crops "are the only logical possibility."

"In the corn belt, an acre of corn used to feed hogs, if converted to an acre of grass for beef, would shrink food calories per acre by 75%. An acre yielding 80 bu. of corn would produce about 700 lb. of pork. The same acre in grass would produce about 165 lb. of beef." This line of reasoning, Dr. Myers added, has been promoted recently by Dr. Herrell De Graff, Cornell university food economist.

He questioned, however, whether the increasing rate of American agricultural production would more than offset population increases by 1975.

"At the present rate of population growth, the 1975 population will exceed that of 1951-53 by more than one third," he said. "If this happens, our projected food needs are too low.

"During the war, farmers put to use accumulated information developed but relatively unused through a half century of research. But there is great doubt whether we have an equal reservoir of unused information and materials today for farmers to use in increasing per acre production levels in the years ahead."

Dr. Myers said the expanded production of grain and intertilled crops in recent years have increased the drain on our land. Prospects for increased population in the future, he said, mean that "we can't afford to continue losing cropland in the future, as we are at present, at the rate of a half million acres a year, through water and wind erosion."

Kenneth Smith

PRODUCT CONTROL — Kenneth Smith has been appointed manager of the product control department of Dannen Mills, St. Joseph, Mo. Mr. Smith has attended the feed technology school of Kansas State College and recently completed a tour of duty in the U.S. Air Force. He started with Dannen Mills in 1951. He succeeds Francis Linneweh who will work full time as manager of the firm's laboratory.

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Mobile Mill Owners Realize Extra Profits from Service-Depot Network

Service-parts depots are spelling higher profits for mobile mill owners these days by giving them the quick service they need to maintain their rigid daily route schedules.

For example, at least one major mobile mill firm, Daffin Manufacturing Co., Lancaster, Pa., has for years provided an established network of such service centers for the benefit of its Feedmobile owners.

Now, strategically located to provide parts and service coverage for 38 states and Canada, these Daffin depots are manned by trained personnel and have facilities for repairing and furnishing parts for any of the firm's feed processing equipment.

Owners report that the network is a distinct benefit since it puts them within a short distance of factory-level assistance if ever and whenever they need it.

Use Route System

In the case of a feed dealer operating a Daffin Mobile Mill (Feedmobile) on a well planned and tightly-scheduled route system, farm customers come to expect and to depend on prompt service. They know that the mill will drive up to their bin-door on a certain day every week or every other week—almost at a certain hour. To keep these farmers satisfied with a dependable feed service, the mobile miller needs to protect and maintain his equipment so that it, in turn, gives him dependable service.

In normal operation, by following the maintenance and service program outlined by the Daffin firm in its Owner Training School, the Feedmobile operator can anticipate his need for replacement parts and can receive them from his nearby Service-Parts Depot within a few days.

Moreover, if the Daffin owner experiences an emergency with his Feedmobile, or if he wishes to have his unit completely overhauled after years of continuous service, he can have it back on the job in the shortest possible time by using his Service Depot facilities. From his point of view, this is much more advantageous than having his mill sent back to Daffin headquarters—often a thousand miles or more from his home territory.

Location of Depots

Daffin Service-Parts Depots are operated at the following locations: Canada—W. C. Becker Equipment Co., Toronto; Georgia—Gray Walker Tractor Co., Perry; Illinois—Werner Motor Co., Springfield; Indiana—Reid-Holcomb Co., Inc., Indianapolis; Iowa—Moorman Equipment Co., Cedar Rapids; Mainline Equipment Co., Inc., Des Moines; Kentucky—Goodman Brothers Co., Shelbyville; Michigan—Peninsular Diesel, Inc., Detroit; Minnesota—Truck Service Co., Rochester; Missouri—K. C. Diesel Power Co., N. Kansas City; New York—L. B. Smith, Inc., Syracuse; N. Carolina—Service Milling Co., Laurinburg; Ohio—Flack Equipment Co., Dayton; Pennsylvania—Daffin Manufacturing Co., Lancaster; Tennessee—Story Brothers, Inc., Knoxville; Virginia—Myers and Rhodes Equipment Co., Lynchburg; and Wisconsin—L. F. George Co., Oconomowoc.

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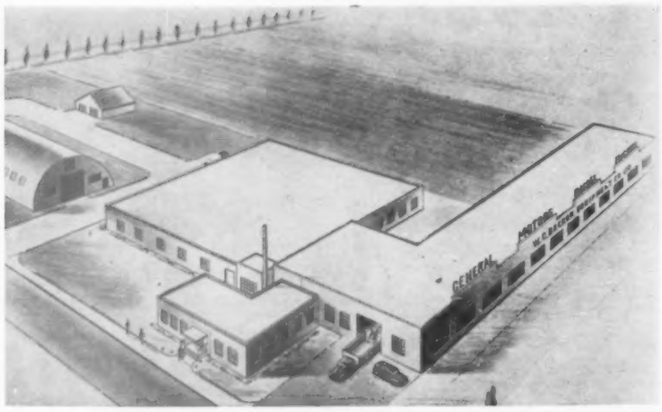

DAFFIN DEPOT—One of the newer Service Parts Depots operated by Daffin Manufacturing Co., Lancaster, Pa., is this one in Toronto, Canada, at W. C. Becker Equipment Co. Other Daffin Depots provide coverage for mobile millers in 38 states.

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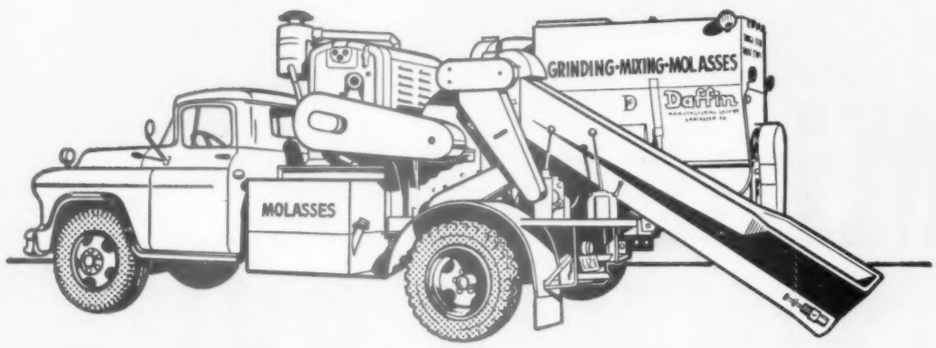
A Daffin will help you get it!



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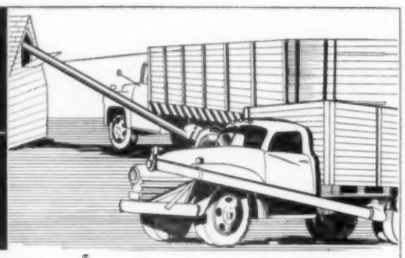

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Soybean Crop May Be Above Estimates

URBANA—Soybean growers probably produced about 490 million bushels in 1957 instead of the 480 million bushels forecast by the government, according to the University of Illinois grain marketing staff.

The staff bases this higher estimate on crop report figures, old crop carryover, crush and exports since harvest. A balance of 18.5 million bushels remains that can be explained only by an under-estimate of crop size or an overestimate of stocks on hand Jan. 1, a staff report said.

During the last quarter of 1957, 86 million bushels were crushed and 42.5 million were exported. An optimistic projection of the crush rate indicates a total of 335 million bushels for the marketing year and exports of 90 million. The larger crop and use estimates would mean a carryover of 45 million bushels next Oct. 1, the report said.

There was rapid into-loan-and-purchase-agreement movement during the last two weeks of January. It now appears that soybean users will need to buy from the Commodity Credit Corp. next summer, so the price should get up to the government resale price, according to the report.

"Processors and exporters will need to buy substantial quantities from farmers before June 15, when CCC beans become available. Prices between now and June will depend on the price at which farmers will sell. Fairly liberal offerings seem likely at current to slightly higher prices," the report said.

It noted that the 1957 soybean crop has set several records. It was the largest ever produced. The October through December crush set a new record. October-December exports topped those of all previous years. Stocks Jan. 1 were the highest ever reported, and it looks as if the amount put into loan and held for carryover will also be a record.

Dr. David P. Langlois

SCIENTIST PROMOTED — The appointment of Dr. David P. Langlois to the newly-created position of technical information scientist was announced by the A. E. Staley Manufacturing Co., Decatur, Ill. Dr. Langlois has been head of the company's carbohydrate research group since 1947. In his new assignment he will review and evaluate published research data from this country and abroad for information leading to the formulation of new research projects. Dr. James A. Bralley, director of chemical research, said information research is a relatively new field and has become increasingly important with stepped-up experimental research in industry and government. Dr. Langlois received his B.S. and M.S. degrees in chemistry from the University of Utah. He received his Ph.D. degree from Pennsylvania State College in 1932 and joined the company as a senior research chemist.

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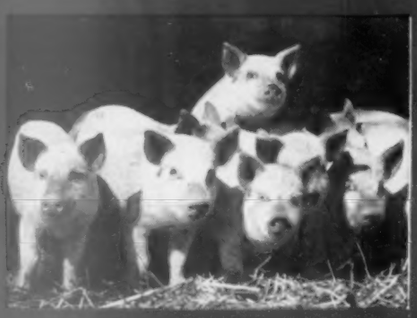

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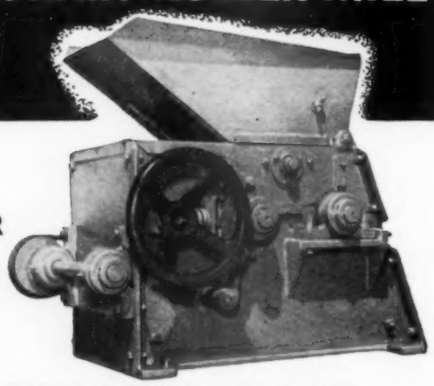

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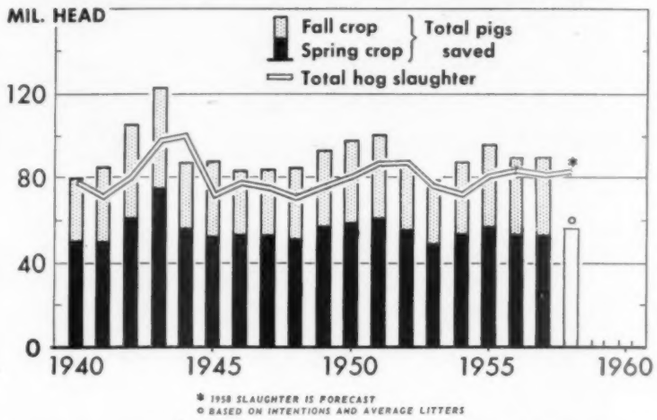
2957 No. Market, Dept. 311 Wichita 4, Kansas

PIG CROPS AND HOG SLAUGHTER



SWINE PRODUCTION—As shown in the above chart, the U.S. Department of Agriculture estimates that the 1958 spring pig crop will be 56 million. This would be 6% larger than the 1957 spring crop, but 3% less than the 1955 high. It is also estimated that slaughter of hogs in 1958 will exceed slaughter in 1957 by about 5%. Prices of hogs next fall are expected to be appreciably lower than during the fall of 1957, yet considerably above prices the fall of 1955. The USDA also released figures recently showing that in 1956 about 10.6 million of the 27.8 million cattle slaughtered were fed for market before slaughtering. About 54% of all steers, 72% of all heifers and only 1.5% of cows were fed before slaughter.

IMPROVES BULK HANDLING

MADISON, MINN.—The Madison Milling Co. recently completed installation of better facilities for handling bulk feed.

WESTERN UNION
TELEGRAM
W. P. MARSHALL, PRESIDENT

DOMESTIC SERVICE — Check the class of service desired, otherwise the message will be sent as a fast telegram: TELEGRAM; DAY LETTER; NIGHT LETTER

INTERNATIONAL SERVICE — Check the class of service desired, otherwise the message will be sent at the full rate: FULL RATE; LETTER TELEGRAM; SHORE SHIP

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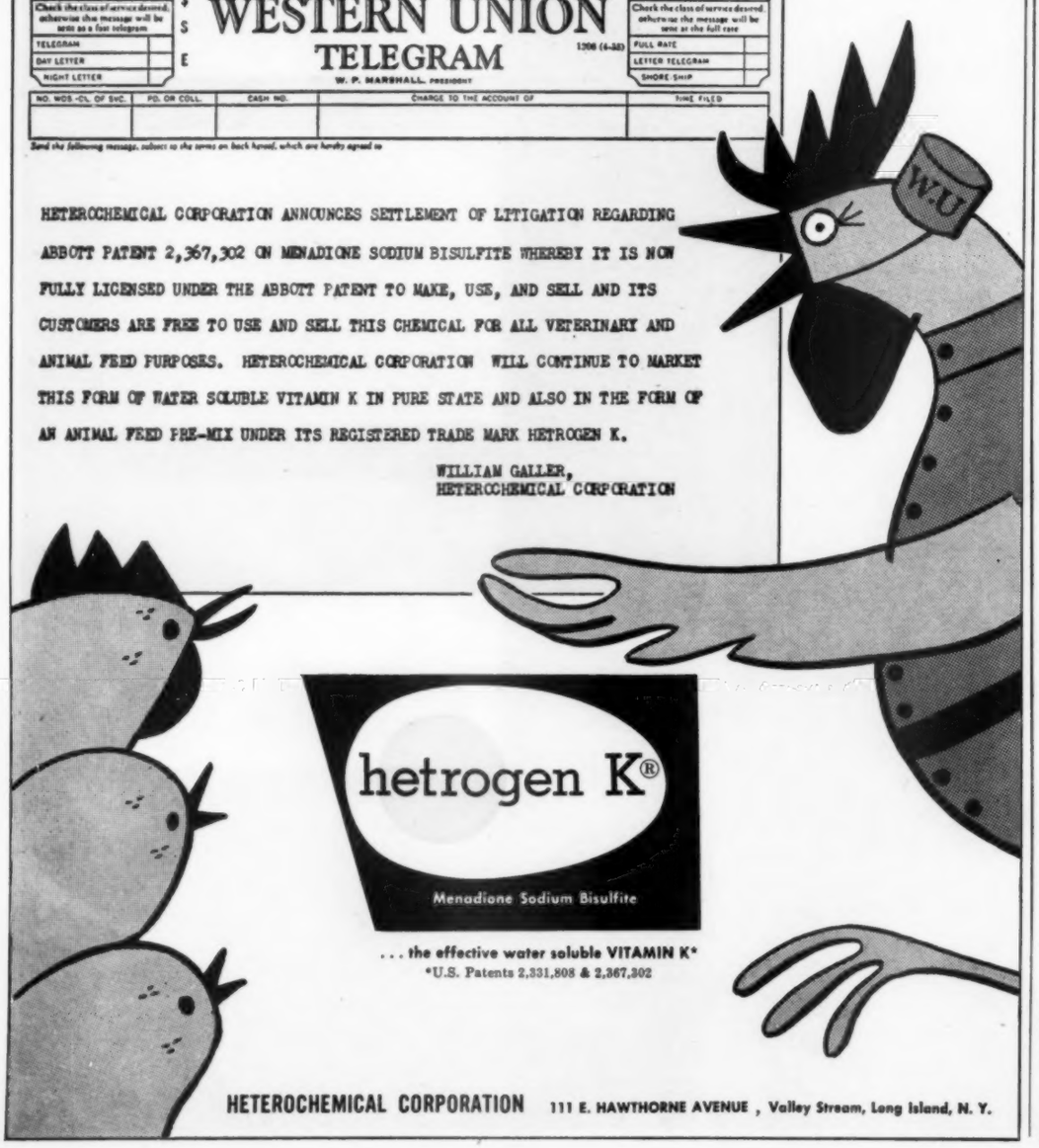
Send the following message, subject to the terms on back hereof, which are hereby agreed to

HETEROCHEMICAL CORPORATION ANNOUNCES SETTLEMENT OF LITIGATION REGARDING ABBOTT PATENT 2,367,302 ON MENADIONE SODIUM BISULFITE WHEREBY IT IS NOW FULLY LICENSED UNDER THE ABBOTT PATENT TO MAKE, USE, AND SELL AND ITS CUSTOMERS ARE FREE TO USE AND SELL THIS CHEMICAL FOR ALL VETERINARY AND ANIMAL FEED PURPOSES. HETEROCHEMICAL CORPORATION WILL CONTINUE TO MARKET THIS FORM OF WATER SOLUBLE VITAMIN K IN PURE STATE AND ALSO IN THE FORM OF AN ANIMAL FEED PRE-MIX UNDER ITS REGISTERED TRADE MARK HETROGEN K.

WILLIAM GALLER,
HETEROCHEMICAL CORPORATION



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Elevator, Farm Supply Management Course Offered in Ohio

COLUMBUS, OHIO—Speakers at the annual Elevator and Farm Supply Management Short Course at Ohio State University March 3-7 will be specialists in elevator and farm supply management, along with professors in business organization, marketing, seeds and feeds.

The course is co-sponsored each year by the university department of agricultural economics, college of agriculture, and the Ohio Grain & Feed Dealers Assn.

It is designed to give helpful information to key elevator personnel and persons engaged in related businesses. The course consists of informal discussion groups along with lectures by authorities in current topics of interest to the trade. Its program is intended to improve management.

Topics scheduled for discussion are merchandising farm supplies, knowing your seeds, managing your antibiotic industry, vertical integration and contract feeding, making your corn business profitable, how far to go on insecticides and fungicides, and bulk handling of fertilizers.

Other topics are: Managing your accounts receivable, problems of storing and conditioning grain at the local level, legal problems of the elevator, and problems and the future of truck grain in Ohio.

All meetings will be held in the Ohio Union Building on the university campus. The program will begin at 10 a.m. March 3 and classes will start at 8:30 a.m. each day thereafter. The course will close at 1 p.m. March 7. A $25 fee covers all materials and dinner meetings on March 3 and 5.

STORAGE SPACE ADDED

TOPEKA, KANSAS—Construction is under way on a grain storage addition to the Topeka Mill & Elevator Co.'s Elevator A here. The addition will have 46 bins and will be 142½ ft. high, according to Paul R. Bailey, vice president and general manager. He said it will increase the capacity of the elevator from 2 million bushels to 3½ million bushels.

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If you're using costly antioxidant solutions to protect your tallow, you can save up to 83% of your stabilizing costs by switching to Koppers BHT feed-grade crystals.

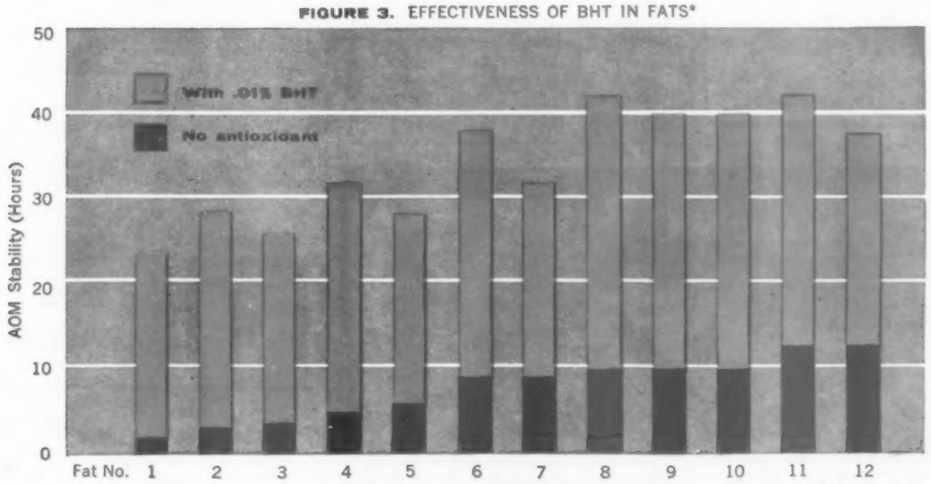
By adding .01% BHT, or one pound per 10,000 pounds of tallow, you get 20 hours AOM added stability to your tallow.* And, you can easily make your own master solution with one pound of crystals dissolved in each half gallon of warm tallow.

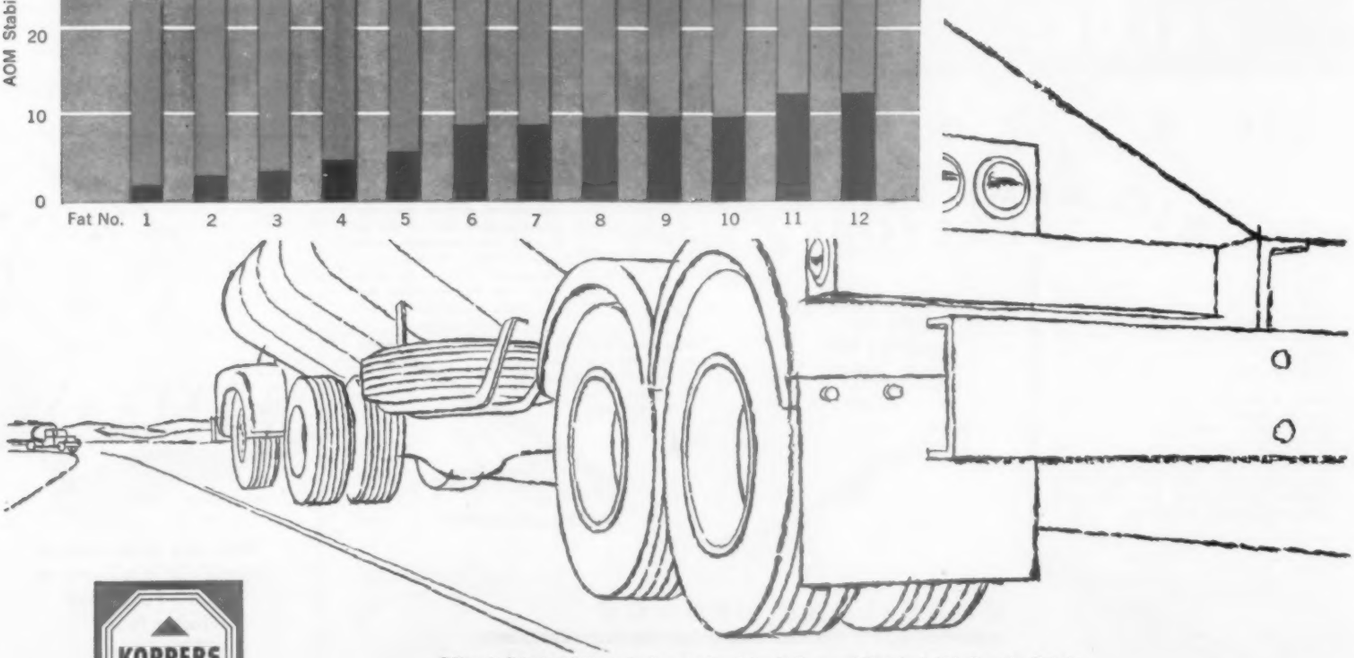
One and a half gallons of this solution will stabilize a 30,000-pound tank truck of tallow for only a few dollars.

For complete information on Koppers BHT, write for our new, illustrated booklet. Koppers Company, Inc., Dept. F-28, Chemical Division, Pittsburgh 19, Pennsylvania.

American Meat Institute Foundation, Bulletin No. 18, June, 1954

FIGURE 3. EFFECTIVENESS OF BHT IN FATS*





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Nematode Survey Covers 25 States

WASHINGTON — About three-quarters of a million acres in 25 eastern and central states were surveyed during 1957 in a search for the soybean cyst nematode, the U.S. Department of Agriculture reports. This new pest of soybeans has now been found on 15,626 acres in six states—Arkansas, Kentucky, Mississippi, Missouri, North Carolina and Tennessee.

USDA pest-control workers declare it fortunate that this root-feeding nematode has not yet been found in the chief soybean-producing areas of the U.S. The surveys show that the nematode is established in three main areas.

The largest is a narrow 11-county strip straddling the Mississippi River and extending from southwestern Kentucky to northwestern Mississippi. Counties included in the area are: Crittenden and Mississippi in Arkansas; Fulton in Kentucky; DeSoto in Mississippi; Pemiscot, New Madrid and Stoddard in Missouri; and Dyer, Lake, Lauderdale and Obion in Tennessee.

The other two main infested areas are in North Carolina. One includes New Hanover and Pender counties along the southeastern coastline. The other is more than 200 miles northeastward, in Camden County on the state's northern border.

State agriculturists in cooperation with workers in USDA's Agricultural Research Service made the 1957 nematode survey. It covered parts of 25 states — Alabama, Arkansas, Delaware, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Virginia and Wisconsin.

Various methods were used in inspecting the approximately 750,000 acres surveyed—examining soil for the underground pest, pulling plants to check roots for clinging female nematodes and visually inspecting sample fields for anemic-looking plants and yellowed spots that might reveal feeding of the tiny eelworm.

The little brat rode the hobby horse in the toy department for hours. His doting parents pleaded, offered bribes, but to no avail. Their darling wouldn't budge. Finally, jolly ole Santa walked over to the child and whispered into his ear. The kid was off in a jiffy.

On the way home, the curious mother asked, "What did Santa say to you, sweetie, that made you jump off the horse?"

The little brat replied, "He said, 'Get the devil off that horse or I'll break your little neck'."

◆ ◆ ◆

Here's a disappointing experience: A man decided to substitute candy bars for cigarettes. The only trouble was, he simply couldn't keep the candy bars lit.

◆ ◆ ◆

The drowning man who was pulled out and revived by a Miami Beach lifeguard. When the rescued man came to, his first words were to his wife: "Tell me, dear, how much should I tip him?"

◆ ◆ ◆

Christmas day: Got an air rifle.

Dec. 26: Snowing. Couldn't go hunting.

Dec. 27: Still snowing. Couldn't go hunting.

Dec. 28: Still snowing. Shot Uncle Charlie.

◆ ◆ ◆

Sam had backslid again, and his pastor was upbraiding him for it. "Why didn't you say, 'Get behind me, Satan'?"

"I did say dem very words, parson," Sam replied. "Den Satan he say, 'All right Sam, I'll get behind. Since we bofe goin' de same way, hit mek no dif'unce who takes de lead'."

◆ ◆ ◆

Nerve: That which enables a man seated in a bus to flirt with a woman who is standing.

◆ ◆ ◆

The most dangerous curves are frequently inside the car.

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BULK FERTILIZERS—GRAVEL—SAND—LIMESTONE

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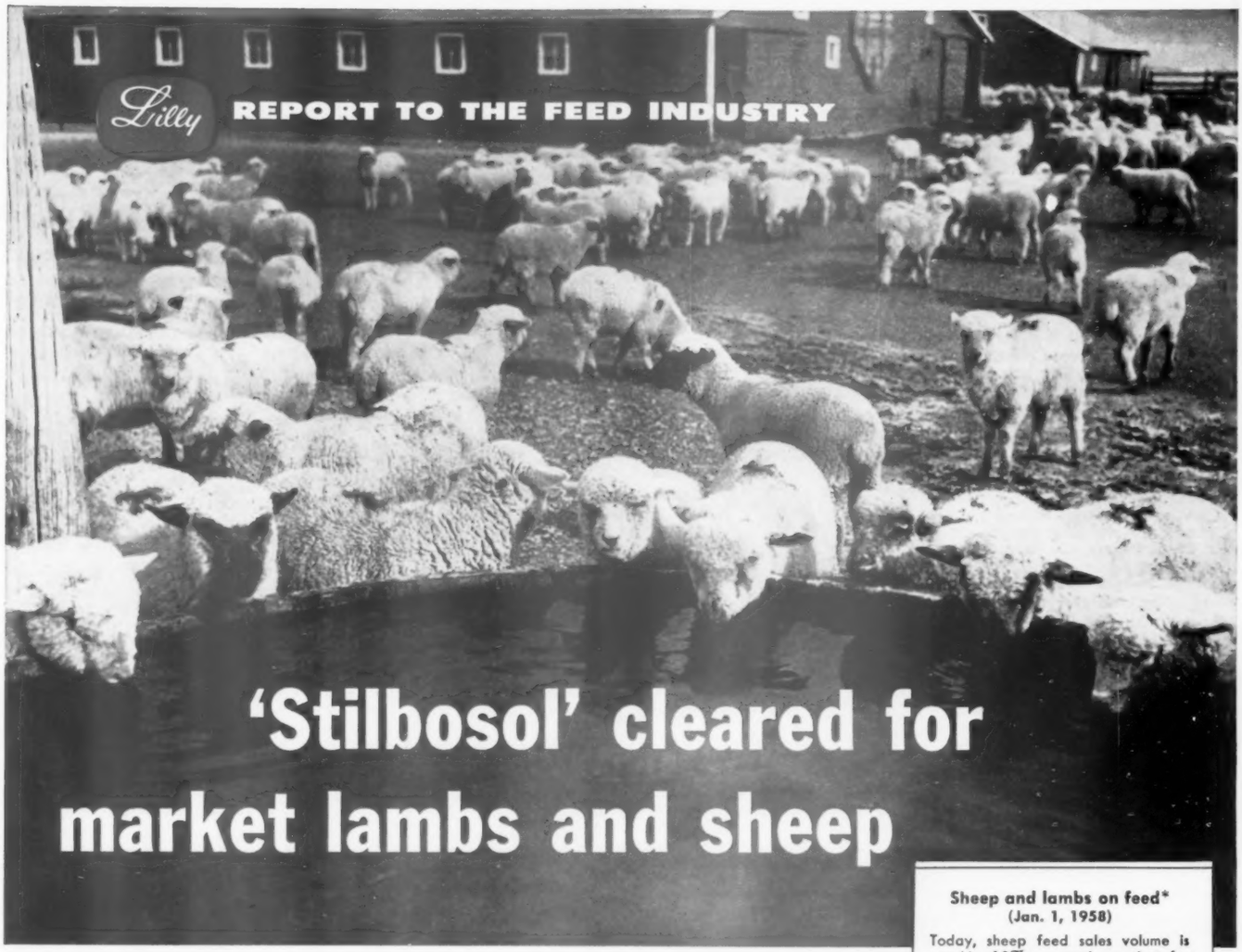

'Stilbosol' cleared for market lambs and sheep

Rations with 'Stilbosol' boost gains an average of 19%, cut feed per pound of gain 11%, in twelve tests. No difference in carcass yield or quality.

by Eugene S. Hahnel

It took several years of experimenting to find the most economical level of 'Stilbosol' for sheep and lamb fattening rations. However, as the twelve experiments in the table below show, 2 milligrams per day per sheep or lamb boosts gains an average of 19%, and reduces feed per pound of gain 11%. This increase in gain and feed efficiency *is almost identical to the effect of 'Stilbosol' in cattle rations.*

Shot in arm for sheep industry. Such a major advance is good news to the sheep industry. Based on the average figures in these twelve tests, lamb and sheep feeders can expect a return of about $10 for every $1 invested in 'Stilbosol.'

New opportunity for sheep feed sales. 'Stilbosol' puts a new face on the opportunities for increased feed sales. Besides providing a new sales tool to use in heavy commercial feeding areas, the extra benefits offered by 'Stilbosol' in your rations should help revive interest in areas where sheep were once important sources of income.

'Stilbosol' for sheep is being sold to feed manufacturers who obtain clearance to add it to their feeds. Eli Lilly and Company is again offering free assays to manufacturers who wish to have their complete sheep feeds and supplements containing 'Stilbosol' checked for uniformity.

This table shows the feedlot performance of sheep fed 2 mgs. of diethylstilbestrol daily.

Station Testing	Days Fed	No. of Sheep	Avg. Daily Gain (lbs.) Control	Avg. Daily Gain (lbs.) 'Stilbosol'	% Extra Gain	% Feed Saved
Kansas	105	100	.26	.32	23	16
Iowa	63	80	.38	.48	26	18
Iowa	63	79	.38	.43	13	13
Minnesota	84	20	.45	.44	−2	1
Minnesota	84	20	.44	.44	0	0
North Dakota	70	18	.50	.59	18	—
North Dakota	70	18	.33	.50	51	—
Kansas	137	100	.24	.30	25	14
Lilly	96	20	.44	.48	9	1
Lilly	86	10	.30	.39	30	26
Lilly	54	10	.55	.60	9	3
Lilly	54	10	.63	.75	19	18
Averages			**.32**	**.38**	**19**	**11**

Sheep and lambs on feed*
(Jan. 1, 1958)

Today, sheep feed sales volume is roughly 10% as much as that for market cattle. Regionally, or locally, sheep feeds are often far more important. A list of the states where sheep are fed for market is shown:

Rank	State	Number
1.	Colorado	504,000
2.	Nebraska	431,000
3.	Iowa	430,000
4.	California	250,000
5.	Kansas	246,000
6.	Minnesota	224,000
7.	South Dakota	222,000
8.	Ohio	193,000
9.	Illinois	180,000
10.	Texas	164,000
11.	Wyoming	135,000
12.	Missouri	126,000
13.	North Dakota	119,000
14.	Montana	118,000
15.	Indiana	100,000
16.	Michigan	90,000
17.	Utah	74,000
18.	Idaho	72,000
19.	Wisconsin	67,000
20.	Oklahoma	37,000
21.	New Mexico	36,000
22.	Oregon	34,000
23.	Arizona	26,000
24.	Washington	19,000
25.	Nevada	16,000
	Balance U. S.	25,000
Total	**United States**	**3,938,000**

*Source: U.S.D.A., Sheep and Lambs on Feed, Jan. 1, 1958

Stilbosol
(Diethylstilbestrol Premix, Lilly)

Lilly

'Stilbosol' is Eli Lilly and Company's trademark for Diethylstilbestrol Premix which is manufactured and sold under exclusive license granted by Iowa State College Research Foundation, Inc., under its U. S. Patent No. 2751303.

ELI LILLY AND COMPANY, AGRICULTURAL AND INDUSTRIAL PRODUCTS DIVISION, INDIANAPOLIS 6, INDIANA

UP OR DOWN?

By Leonard W. Schruben
Agricultural Economist, Kansas State College

What Next for Grain Sorghum

As one travels the Great Plains, considerable emphasis is given to the "new trend" in cropping patterns. Emphasis is given to the size of the 1957 grain sorghum crop, and the implication often is that the region is rapidly becoming a major livestock producing area.

This may well be the result, but there are a few indicators pointing the other direction. It would be well for feed manufacturers to keep these in mind while planning for the future. These factors also have a wide geographical influence and hold implications for the feed trade everywhere in the country.

At first glance, a production chart will indicate important gains in acreage and production of grain sorghum. Acreage has been made available through the reduction of plantings to wheat and cotton in recent years. However, the acreage in grain sorghums in 1957 clearly is an exception to the general trend. Drouth in the fall of 1956 followed by ample moisture in 1957 arriving early enough to plant grain sorghum led to planting most available acres to this crop, at least in Kansas. It appears as though 1957 was an exception, and the record of production will stand for some time.

For example, Kansas planted 7.2 million acres of wheat in the fall of 1956. In the fall of 1957 almost 10.9 million acres were planted, an increase of 3.7 million acres. Corn, oats, barley and soybeans are planted on about 4 million acres in Kansas. In the past this has not varied greatly from year to year.

This would mean that grain sorghum acreage in Kansas for 1958 harvest would total about 3.3 million acres, assuming total acreage planted to all grain crops remained the same as in 1957.

To summarize, 7 million acres in Kansas were planted to grain sorghum in 1957, whereas there is room for about 3.3 million acres in 1958. Of course, these figures are "iffy." More acres can be found in Kansas for grain sorghum than the 3.3 million indicated.

Sorghum Well Established

Will grain sorghum acreage decline below previous levels? The best guess is that it will not. Expanded irrigation and development of hybrids combine to make grain sorghum a high yielding crop. The success of the 1957 crop has created a lasting impression. The success of hybrids encourage the belief of milo as a firmly established crop.

Will livestock production increase in the area? This is one big question mark. Favorable feeding price ratios presently encourage such activity. Some economies may well be realized in feeding in the southern Great Plains rather than shipping grain sorghum to the West Coast. On the other hand, variability in grain and forage production tends to discourage development of livestock fattening in the area greater than that which will utilize the quantity produced in a year of low crop production.

Much has been made of shipments from Kansas to California. This movement increased from about 150 cars in 1956 to over 2,200 in 1957 according to records of inspection for European corn borer. These are summarized in Exhibit 1. It is believed much of this grain is owned by Kansas farmers and was shipped to California for storage under the Commodity Credit Corp. loan program. It would be interesting to speculate on how much of this grain will be exported after ownership is acquired by CCC and will not be fed to livestock in the U.S.

You will realize that shipment of grain sorghum to the West Coast is a rather small proportion of the production for Kansas. A crop of almost 130 million bushels was harvested. About 6 million bushels were shipped to the West Coast.

From the standpoint of increased local feeding of grain sorghum it would be interesting to speculate the effect of a change to "local loan rates only" basis for price support. The present basis relates terminal to local rates taking into account transport and handling charges. While the present system may not encourage the movement of grain sorghum from the production area, it makes it possible for farmers to obtain price supports on grain sorghum in storage at distant points without much, if any, sacrifice.

Because the present system makes efficient use of grain storage facilities that otherwise might be idle it isn't likely to be changed. However, such a change is always possible and could have a decided impact on the location of livestock feeding operations.

EXHIBIT 1. Movement of Kansas Grain Sorghums to Western States by Railroad Cars and Trucks, 1956 and 1957*

	—Cars/Trucks— 1956	1957
Washington	314/0	127/0
Oregon	66/0	23/1
California	147/7	2,223/4
Nevada	....	114/0
Arizona	....	19/0
Utah	2/2	611/0
Colorado	33/0	165/0
Total cars	562	3,282
Total trucks	9	5
**Total bushels	1,128,500	6,566,500

*Estimated, average railroad car carries 2,000 bu., average truck 500 bu.

C. E. McCauley Heads Delmarva Committee

GEORGETOWN, DEL.—C. Ed McCauley, Seaford, Del., has again been named head of the committee to raise funds for the annual Delmarva Chicken Festival and for activities designed to promote consumption of chickens grown in the area.

He is vice president of the Delmarva Poultry Industry, Inc. The announcement was made by John R. Hargreaves, Federalsburg, Md., president of DPI.

Heading the committee's three state divisions in the fund drive will be Byard Carmean, Laurel, Del.; E. Bowen Quillin, Berlin, Md., and Roy Twilley, Chincoteague, Va.

Under Mr. McCauley's direction last year the committee collected over $100,000, more than ever before, Mr. Hargreaves said.

He also mentioned that last year a total of 95 prominent growers, feed men, processors and suppliers from the peninsula's industry volunteered their services to help in the fund drive.

Poultry Processing Plant Sold in Oregon

SALEM, ORE.—Final steps toward closing out Northwest Dairy & Poultry Products Co., at one time Oregon's largest poultry processing firm, were announced here.

Basil Ryals, Salem, and Edward Heyerly, Albany, Willamette Produce Co. owner, have filed incorporation papers for the Northwest Poultry, Inc., after purchasing the Salem Northwest Poultry & Dairy Products plant including land, building and machinery. Mr. Ryals has been Salem plant manager for the old firm.

Mr. Heyerly's Albany plant will be closed, and the new firm will lease a portion of the old Northwest Poultry & Dairy Products' Portland plant as a sales office, Mr. Ryals said.

Poultrymen prefer...
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...because hens prefer them

EGGSHELL BRAND OYSTER SHELLS appeal most to poultrymen because they appeal most to hens.

Pure, soft, clean and dust-free . . . they are tops in the field for digestibility.

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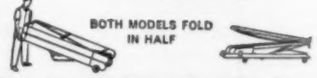
Model "R" Hytrol
- Lightweight, sturdily constructed
- Ruff-Top belt for longer life
- Loads at floor level
- Reversible at flip of switch
- Sizes—10 to 21 ft.

Model "B" Hytrol
- Handles 150 lb. bags, boxes, cartons
- Elevates hydraulically to 45 degrees
- Ruff-Top belt, with or without cleats
- Reversible at flip of switch
- Sizes—10 to 22 ft.

MODEL "R" HYTROL A lightweight aluminum folding conveyor for complete portability.

MODEL "B" HYTROL A heavy-duty portable, folding conveyor, built for long life.



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William Jenner Elmont G. Honea

Ultra-Life Laboratories Adds New Department

EAST ST. LOUIS, ILL.—E. L. McKee, president of Ultra-Life Laboratories, Inc., East St. Louis, has announced the formation of a new department as the first in a series of expansion plans the firm has for 1958.

The new department, to be known as the base-mix department, will be under the direction of William Jenner and Elmont George Honea.

Mr. Honea is a former dairy commissioner of New Mexico. He left that post to join Ultra-Life in 1956. A graduate of Texas Technical College, Lubbock, Texas, he was a member of college judging teams and later was a herdsman in New Mexico.

Mr. Jenner is a graduate of the University of Illinois. He has a bachelor's degree in agriculture and a master's in dairy science. He is a son of Henry H. Jenner, who managed the Kenfleur Farms in northern Illinois and Indiana until their dispersal a few years ago. The younger Mr. Jenner handled the show circuit for his father several years and is now building a herd of Guernsey cattle.

Minnesota Elevator Group Plans Annual Meeting Feb. 24-26

MINNEAPOLIS—Two panels, one on handling wet grain and the other on credits and margins, will be among the highlights of the annual convention of the Farmers Elevator Assn. of Minnesota at the Pick-Nicollet Hotel here Feb. 24-26.

Discussion of wet grain handling will be covered by a panel at 3 p.m. Feb. 24. The moderator will be George Wilkens, vice president of the Minneapolis Grain Exchange, and members will be Henry Bolstad, storage program specialist with the Minnesota Agricultural Stabilization & Conservation Committee; Harold Merrigan, field representative for the Commodity Stabilization Service; Joe Bailey, Cargill, Inc., and Joe Welder, manager of the Farmers Elevator at Blue Earth, Minn.

Moderator of the panel on credits and margins, which is to be held at 3 p.m. Feb. 25, is Oscar Olson, elevator manager at Truman, Minn. Panel members are Stanley Ferguson, Kellogg Commission Co., Minneapolis; William Howard, First National Bank, Minneapolis; Lester Rickert, Osborne McMillan Elevator Co., Minneapolis, and Wendell Lenton, elevator manager at Stewartville, Minn.

The convention program gets under way at 10 a.m. Feb. 24. Among addresses scheduled the first day are one on fertilizers and soil testing, by Prof. Paul Burson, University of Minnesota, and another on new varieties of seed by Prof. Carl Borgeson, University of Minnesota.

Among the speakers Feb. 25 are Ron Kennedy, vice president, F. H. Peavey & Co., Minneapolis, and Alvin Oliver, executive vice president of the Grain & Feed Dealers National Assn., Washington. Another feature of the Feb. 25 program will be the awarding of recognition pins to persons having 10, 25 and 50 years of service to country elevators.

A dance will be held at 9 p.m. Feb. 25, and the business session will be held at 9:30 a.m. Feb. 26.

Sales Representative Named by Hardy Salt

ST. LOUIS—The Hardy Salt Co., with general offices at St. Louis and manufacturing facilities at Manistee, Mich., has announced the appointment of Ronald H. LeGron, Toledo, Ohio, as sales representative for southeastern Michigan, including Detroit, northern Ohio from Cleveland to the Indiana line and northwestern Indiana.

Mr. LeGron attended Toledo University and has been a salesman for the Ohio Gas Fuel Co. for the past five years.

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MICRATIZED® VITAMIN A

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2 more than *twice* as effective

if vitamin A in unprotected form is unstable in your feed

The biological value of the new Nopcay Type V is twice that of natural vitamin A from fish liver oil or its synthetic substitute when both are fed at full potency. As the potency of feed fortified with oil decreases, due to instability, the ratio of effectiveness between Nopcay Type V and oil increases rapidly.

If, for example, your feed fortified with oil loses 35% of its activity under certain mild conditions, and if we assume that the same feed fortified with Nopcay Type V loses even as much as 10% (a liberal allowance, because Nopcay Type V is Micratized), then Nopcay Type V becomes approximately three times as effective as oil. The calculation is made as follows:

	Feed with oil	Feed with Nopcay Type V
Vitamin A loss	35%	10%
Vitamin A retained	65%	90%
Factor for effectiveness of original supplement	x 1	x 2
Relative effectiveness for the animal	65%	180%
	(approx. 3 to 1)	

Why not find out how effective Nopcay Type V can be for you. Write for full details and technical bulletin.

NOPCO CHEMICAL COMPANY
Harrison, N.J., and Richmond, Calif.

NOPCO

Basic producers of Micratized® Vitamins A and D, niacin, calcium pantothenate, choline chloride, and other products

EACH WEEK FEED MEN IN 46 FOREIGN COUNTRIES *Read . . .* FEEDSTUFFS

AFMA Issues Management Recommendations for Turkeys

CHICAGO—The Nutrition Council of the American Feed Manufacturers Assn. has completed sets of management recommendations for breeding turkeys and growing turkeys from eight weeks to market.

These recommendations are part of an extensive series of uniform management recommendations for livestock and poultry which have been or are being prepared by the council. Dr. Frank Crane of Land O'Lakes Creameries, Inc., Minneapolis, is chairman of the council's management survey committee.

The uniform recommendations are prepared through the cooperation of Nutrition Council members, agricultural colleges and the U.S. Department of Agriculture.

The recommendations, which are put in leaflet form by the AFMA, are designed to provide feed firms and others working with feeders with sets of uniform management recommendations.

The new sets of recommendations follow:

14 Management Recommendations for Growing Turkeys

(From 8 weeks to market)

RANGE

1. Weather permitting, poults may be moved to range at eight weeks.

2. It is recommended that 200 be the maximum number of birds per acre of range.

3. Feeders, waterers, roosts, and shelters should be moved as often as necessary to maintain sanitation.

4. Range should be rotated, at least yearly.

5. A grazing crop should be provided on range if possible.

FEEDER AND WATER SPACE

6. The following feeder space is recommended per 100 birds: Eight to sixteen weeks—40 linear feet*; sixteen weeks and over—50 linear feet*. Where self-feeders are used, feeder space may be reduced twenty-five per cent.

7. Two automatic or jet-type waterers, or 10 linear feet* of water trough space should be provided per 100 birds.

GENERAL RECOMMENDATIONS

8. Roosts are recommended on range. Allow 10 to 15 in. per bird for large type and 10 to 12 in. for small type turkeys. Roosts should be 2 to 3 ft. high.

9. Portable range shelters and/or shades are recommended to provide at least 1.8 sq. ft. per large type bird and 1.4 sq. ft. per small type bird.

10. A minimum of 6 sq. ft. of floor space per large type bird or 4 sq. ft. per small type bird should be provided when confined.

11. Where porches are used, slat floors are recommended for turkeys reared in confinement. Slats should be one inch apart and strong enough to support the birds, with a maximum surface width of two inches.

12. Vaccinations to be considered are Newcastle, fowl pox and erysipelas, depending upon local conditions.

13. Turkeys should be wormed when worm infestation is present.

14. Hens and toms should be separated if injury becomes a problem.

14 Management Recommendations for Turkey Breeding Flocks

1. Shelter

Breeding turkeys should have protection from the weather. In most cases a shelter is sufficient, but under extremely low temperatures a house should be provided.

2. Floor Space or Range Area

Where breeders are housed, a minimum of 800 sq. ft. of floor space per 100 large-type turkeys, or 600 sq. ft. of floor space per 100 small-type turkeys should be provided.

A minimum of one acre of range should be provided for each 400 turkeys of either large or small-type.

3. Roost Space

A minimum of 16 inches per large-type bird and 12 inches per small-type bird should be provided.

4. Feeder Space

A minimum of 50 linear feet* of feeder space should be provided per 100 large-type breeders, and 40 linear feet* of feeder space per 100 small-type breeders.

5. Water Space

A minimum of 2 automatic or jet-type waterers should be provided for each 100 large-type or small-type breeders. When trough-type waterers are used, provide a minimum of 12 linear feet* of trough space per 100 large-type breeders, and 10 linear feet* of trough space per 100 small-type breeders.

6. Nests

When individual box-type nests are used, it is recommended that a minimum of 20 nests be provided for each 100 breeders. For large-type hens, the nest area should be 24x24 inches. For small-type hens, nest area should be 18x24 inches.

7. Nesting Materials

Shavings are generally considered most desirable as nesting material, although crushed cobs, cane fiber, chopped straw, peanut hulls, coarse sawdust, dry sand, and others may be used satisfactorily.

8. Number of Toms

Provide a minimum of 10 large-type toms or 8 small-type toms per 100 hens.

9. Age of Breeders

It is recommended that hens not be kept a second year unless pedigree work is being done.

10. Saddles for Hens

It is recommended that all hens be

*LINEAR FOOT: One foot of feeding or watering space. For example, a six foot feeder open on both sides has 12 linear feet of feeding space. The same principle applies to watering space.

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E

VITAMIN E SUPPLEMENT

Contains 20,000 I.U. of Vitamin E per pound

STABILITY—*Open*-container storage tests (3 weeks at 113° F, both dry and at 100% rel. humidity) proved Peter Hand E's stability under the most trying conditions.

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RELIABILITY—Peter Hand Research Laboratory and Experimental Farm constantly test Peter Hand products to assure highest quality and effectiveness.

Day by day scientific research increases our consciousness of the importance of Vitamin E in livestock and poultry rations.

Some common results of low Vitamin E rations.

- Poor fertility and hatchability in turkeys.
- Enlarged hocks in turkeys.
- "White muscle disease" in calves.
- "Stiff-lamb disease."
- "Crazy chick disease" in poultry.
- "Yellow fat disease" in mink.

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Division Peter Hand Brewery Co.

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Peter Hand Foundation, Dept. F 2-22,
1000 W. North Ave., Chicago 22, Ill.

Please send me full data and recommended usage on Peter Hand Vitamin E Supplement.

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COMPANY NAME .....

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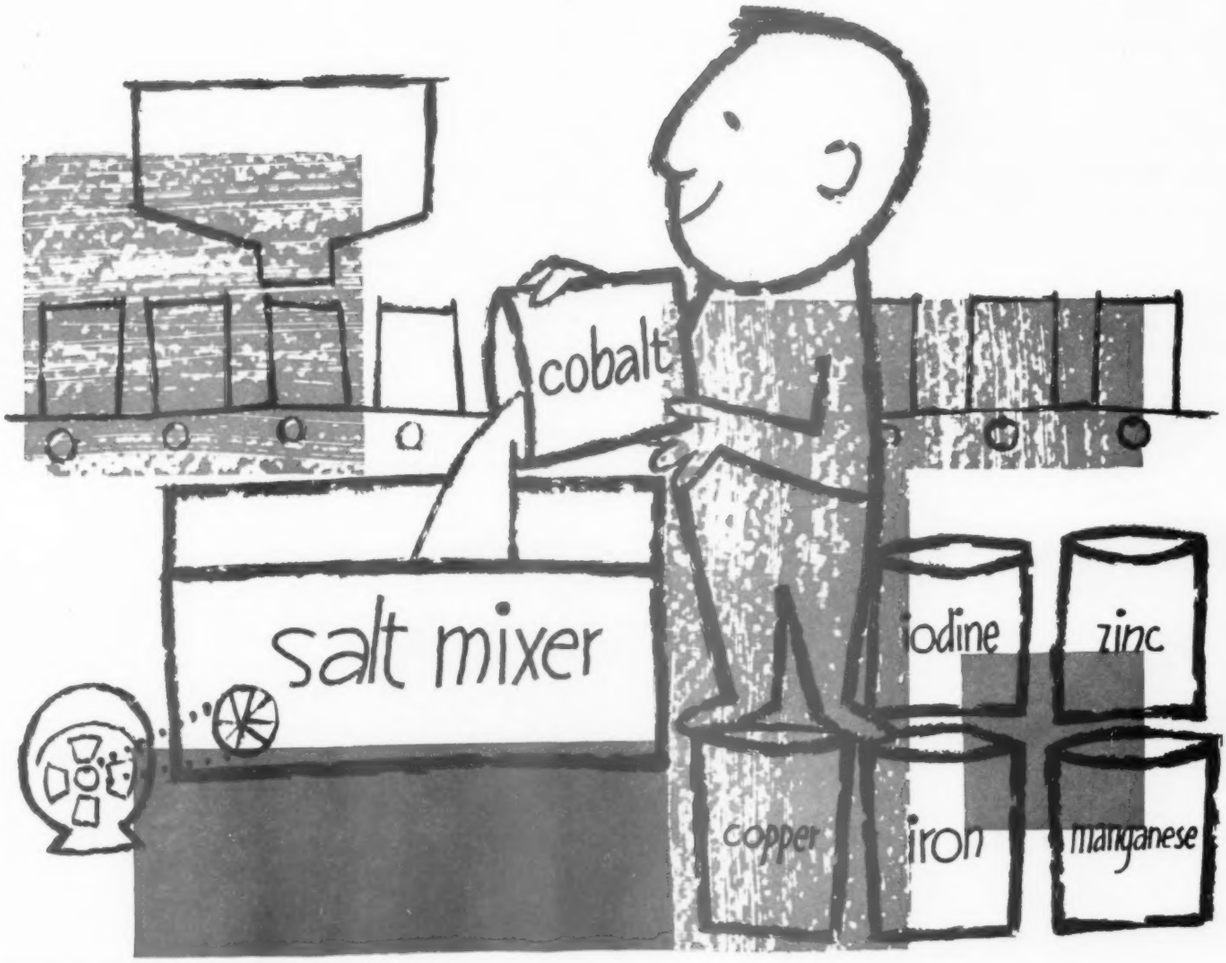
THE CRETE MILLS CRETE, NEBRASKA Division of the Lindsay Grain Co.



PROVEN:

Only trace minerals known to be lacking in natural feeds are used in Morton Trace-Mineralized Mixing Salt

It has been proven by research and practical feeding that poultry and livestock feeds may be deficient in one or more of the six widely known trace minerals (cobalt, iodine, iron, copper, manganese and zinc). These six, and only these six, are the trace minerals you get in Morton Trace-Mineralized Salt.

Research to determine the nutritional values of other minerals goes on constantly. However, until it is proven beyond all doubt that other trace minerals must be added to feeds, Morton will *not* use them. Morton, the company you can rely on, offers *proven* values only.

Also, Morton uses only top quality compounds as the sources of the trace minerals. They are superior to ordinary sources because they offer greater nutritional availability . . . and they are insoluble in water, guarding your feeds against trace mineral "leach-out".

Other Morton Mixing Salts are Iodized Mixing and the extra-free-flowing Special Mixing Salt. All three products are quickly available through Morton's nation-wide distribution system.

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Company_____

Address_____

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County_____ State_____

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IODIZED MIXING TRACE-MINERALIZED MIXING SPECIAL MIXING

THE MIXER THAT MEETS EVERY MIXING REQUIREMENT...

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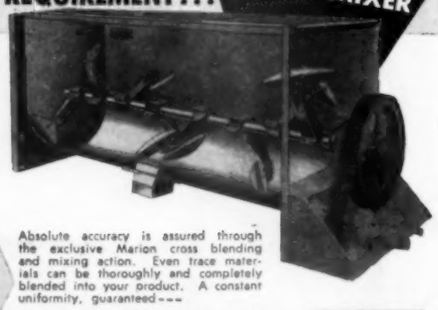
WITH Exclusive MIXING AND BLENDING ACTION



MIXES DRY MATERIALS:
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saddled when natural mating is being practiced.

11. Artificial Insemination

Artificial insemination is recommended in addition to regular matings when fertility is unsatisfactory.

12. Clipping and Debeaking

Wing-clipping of hens is recommended to prevent flight.

Hens may be debeaked to control cannibalism.

13. Artificial Light

Artificial lights should be used to maintain a total of 14 hours of light per day. A minimum of one clean, 60-watt bulb with reflector should be suspended at a distance of 6 feet over the birds, and should be placed so as to cast light over roosts, feed and water.

Toms should be lighted for 5 to 6 weeks and hens 3 to 4 weeks before saving eggs for hatching.

14. Vaccination and Worming

Vaccinations to be considered are Newcastle, fowl pox, and erysipelas, depending upon local conditions.

Worming of breeders should depend upon a demonstrated need.

Everett A. Blasing

DUTIES EXPANDED—Everett A. Blasing, director of nutrition for the Pillsbury Mills, Inc., feed division at Clinton, Iowa, has been appointed manager of all nutrition, product development and research facilities. The announcement was made by G. R. Peterson, general manager of the division. Mr. Blasing will fill the post formerly held by Dr. Spencer Morrison, who has resigned to become an independent feed consultant, and to devote more time to editing Morrison's Feed and Feeding. Dr. Morrison is co-publisher of this feed manual with his father, F. B. Morrison. Mr. Blasing joined Pillsbury in 1936 as a control chemist, and became director of nutrition for the feed division in 1947. He is a member of the nutrition council of the American Feed Manufacturers Assn.

Give your feeds this pure whey extra:

KRACO

the fresh-dried whole whey that's naturally sweet

- no neutralizers added to upset milk mineral balance
- no fermentation to reduce high lactose content*

*Kraco is guaranteed at least 65% lactose—runs are usually between 70-72%

When you supplement feeds with Kraco, you are using *pure* whey. Nothing has been added, nothing taken away. In processing Kraco, Kraft safeguards its freshness and sweetness in two vital ways:

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Kraco contains all the whey nutrients, including the valuable whey factor, lactose (minimum 65%), milk protein (12%, mostly lactalbumin), milk minerals and B complex vitamins.

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500 Peshtigo Court, Chicago 90, Illinois

Huge Farm Operation Becomes Corporation

MEMPHIS, TENN.—The Lee Wilson & Co. farming and business enterprise in eastern Arkansas was recently incorporated.

The company was founded 64 years ago by R. E. Lee Wilson, who died in 1933. It cultivates 30,000 acres of land each year, including a 15,000-acre cotton plantation, 10,000 acres of soybeans and 5,000 acres of rice, wheat, barley and oats.

A cattle feeding project includes a feed mill and production of fat cattle for meat packing companies in Memphis and St. Louis. A company soybean processing plant handles 45,000 tons of soybeans a year.

The company is a principal contributor to Delta Products Co., cottonseed oil mill and refinery at Evadale, Ark.

The firm includes a number of other businesses, including the Delta Valley & Southern Railway.

The reason given for the incorporation of the enterprise was to simplify its business structure.

NEW ELEVATOR OPENS

CRAIGMONT, IDAHO—The Union Warehouse & Mercantile Co. recently completed its new elevator. The all-steel structure replaces the wood, crib-type bins which were destroyed by fire in February, 1956. The plant was completed at a cost of $300,000. It includes 22 steel tanks served by two elevator legs.

COLUMBIA SOFT PHOSPHATE

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LOW COST
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Columbia Phosphate Co.
1007 Washington St. Louis, Mo.

COLUMBIA PHOSPHATE CO. P PHOSPHATE PRODUCTS

"My, they grow up *so* fast"

"It seems such a short time ago that Joan was just a baby. And now she's starting high school!

"Funny how youngsters seem to grow up so much faster than when I was a girl. But I guess it's just this day and age . . . everybody's so much busier . . . doing all kinds of new things . . . so many new products and conveniences . . . why, you just lose all track of time.

"Just imagine—now we have every single convenience on the farm that they have in the city. And it wasn't very long ago that keeping house on a farm meant working harder than other wives.

"Oh, I'll admit life on the farm hasn't always been easy. But it seems like Ed and I have had a lot more good times than poor ones. We've made a good team. And things have changed so much since we started on the farm.

"There are so many more people now! And judging from stories in the papers, there'll be almost twice as many people in years to come. My gracious, I wonder how many houses it will take to make enough homes for them all? And how much more food will it take to feed them? What a challenge it's going to be for our farms to produce so much more! I guess it means a man will have to be a really *good* farmer.

"Of course, to be a good farmer means our youngsters, and we too, will have to be alert and smart. Things are bound to come along that will change some ways of farming, and we'll have to adjust to them.

"I guess the best thing *we* can do is to bring Joan up properly. Then, let her make up her own mind what she'll do. Her farm background should be valuable in whatever she chooses. I can't help but think, though, that Joan will see things as I did and become a farm wife. A lot of work and responsibility—yes. But if the future rewards her as it has me, it will be the wisest decision she'll ever make."

* * * * *

You know, that's the sort of thinking that's been going on at Cargill, too. It makes good sense to us.

We have a lot of confidence in today's farm folks, and their youngsters.

As a Creative Processor of farm products, we've worked closely with farmers for 93 years now—and we've learned just how much these people contribute to this country's economy. The farmer represents free enterprise in its finest form.

With the statisticians predicting a U.S. population of 220 million by 1975—then topping that by predicting a world population of 3½ billion by 1999—it figures there will be a lot more farm products consumed than there are today. That means a larger demand on the farm than ever before . . . a tremendous new challenge to Cargill Creative Processing to find new ways to change raw farm crops into finished products, and to find new markets for those products.

Cargill
CREATIVE PROCESSING

93 Years of Creative Processing of Farm Products

CARGILL

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New Products
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This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

No. 5975—Feed Packer

Chase Bag Co.'s new Southland feed packer, a filling and weighing unit for open mouth bags, has been introduced to feed mills on a national scale by the firm. The unit handles an entire range of feed products with

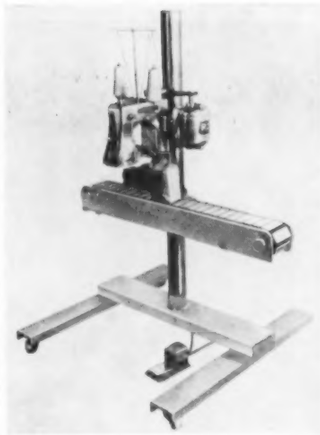
"economies in operation and maintenance cost," according to a company official. The unit was developed for the firm by Chattanooga Boiler & Tank Co., manufacturer of the Southland fertilizer packer also distributed by Chase. In a typical operation at Alabama Flour Mills, Decatur, Ala., the unit packs feeds from raw corn meal to ¾ in. cube range pellets. It will handle any finely divided, granular or pelletized feed, it is claimed. Twenty-five to 100 lb. bag sizes can be filled. Check No. 5975 on the coupon and mail it to Feedstuffs for details.

No. 5972—Swine Feeding Program Report

The details of "Operation Profitopper," a swine feeding program sponsored by Merck & Co., Inc., last summer in the Illinois hog belt, are now available in a new technical service bulletin and a consumer folder. The 10-page bulletin was written by Dr. D. E. Becker of the University of Illinois and Dr. Alexander Zeissig, director of veterinary research, Merck Sharp & Dohme Research Laboratories. It describes in detail the feeding of rations fortified with B vitamins and antibiotics from weaning to marketing. Secure the bulletin and folder by checking No. 5972 on the coupon and mailing it to Feedstuffs.

No. 5976—Bag Closer

Production line bag closing for small bags is now claimed possible with the new Minneapolis Model JC-2 Sewing Machine recently introduced by the Minneapolis Sewing Machine Co. The JC-2 model is a power-operated, all metal conveyor unit synchronized with the sewing head



for closing bags of all sizes up to 25 lb. The conveyor raises or lowers for operation in either a standing or sitting position or to line up with the filling machine. The sewing head adjusts vertically to fit the size of bag. Secure details by checking No. 5976 on the coupon and mailing it to Feedstuffs.

No. 5974—Cage Layer Plants

A new manual designed to be of practical help to poultrymen operating cage layer plants and to those contemplating such operation has been published by The Beacon Milling Co. (Note: The manual is available without cost in the Beacon trade area; elsewhere a small charge is made.) "Profitable Caged Layer Management," by Dr. J. M. Snyder and Dr. C. E. Lee, is the seventh of a series on the subject published by Beacon since 1936. The 52-page booklet is well illustrated with photographs of buildings and equipment. Included among the topics discussed in detail are points in favor of cages as well as reasons cages sometimes fail, types of equipment, pullet replacement programs, methods of rearing; management, including feeding, watering and lighting; parasite and fly control; record keeping and the production of quality eggs. Secure details by checking No. 5974 on the coupon and mailing it to Feedstuffs.

No. 5973—Milk Fever Preventive

A vitamin D_3 concentrate for use in the prevention of milk fever is a new product of American Scientific Laboratories, Inc. The concentrate is called P-M-F. In powder form, the product is supplied in packets of 15 million units each. Twelve packets, said to be enough for the

preventive treatment of one cow, are packed in a small plastic container. Two packets, or a total of 30 million units are fed daily for a period of five to six days before calving to cows susceptible to the disease. P-M-F is given individual cows by sprinkling on feed or silage. Literature may be obtained by checking No. 5973 on the coupon and mailing it to Feedstuffs.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 5904—Folder on the use of dehydrated alfalfa in cow-calf operations, American Dehydrators Assn.

No. 5905—Steel-reinforced grain door for boxcars, Acme Steel Co.

No. 5906—Booklet on phosphorus in feeds, Coronet Phosphate Co.

No. 5907—Dynafac research reports, Armour & Co.

No. 5908—Centrifugal type of electrical safety switch for feed mills, Lincoln Industries Co.

No. 5909—Bulk storage system for free flowing materials, Butler Manufacturing Co.

No. 5910—Newcastle - bronchitis vaccine, Delaware Poultry Laboratories.

No. 5913—Automatic pellet mill requiring no steam, International Machinery Development Corp.

No. 5914—Floor portable bagging scale, Richardson Scale Co.

No. 5915—"Weigh-bin" controls for "packaged" feed processing plants, Daffin Manufacturing Co.

No. 5916—Poultry and hog equipment catalog, Oakes Manufacturing Co., Inc.

No. 5917—Burr mill in stationary and portable models, N. P. Bowsher Co.

No. 5918—"High reach" bulk feed delivery body, Simonsen Manufacturing Co.

No. 5919—"Blow-Thru Feeder" for plant conveying or bulk truck systems, Prater Pulverizer Co.

No. 5920—Mobile feed plant, Mooers Manufacturing Co.

No. 5921—Dynafac film, Armour & Co.

No. 5922—"Bag or bulk" semi-trailer transport body, Henderson Manufacturing Co.

No. 5923—1,000-lb. bulk scale, Burrows Equipment Co.

No. 5924—Engineering report on mixing, Rietz Manufacturing Co.

No. 5925—Silage flavor preservative in packaged form, Flavor Corporation of America.

No. 5928—Feedlot bloat product and appetizer, Armour Veterinary Products.

No. 5929—Combination flatbed and tank for hauling bulk products, Fruehauf Trailer Co.

No. 5930—Electrically operated pig warmer, Ritchie Manufacturing Co.

No. 5931—Corn fermentation condensed solubles in chick feeds, Corn Products Sales Co.

No. 5932—Roller mill for cracking, crimping or flaking dry and steamed grain, Roskamp Huller Manufacturing Co., Inc.

No. 5933—Horizontal conveyors for conveying fine, dry materials, Fuller Co.

No. 5934—Multiwall baler bag for export shipment of goods, St. Regis Paper Co.

No. 5935—Dust and products collectors, Sprout, Waldron & Co., Inc.

No. 5936—Methionine as a turkey feed supplement, E. I. du Pont de Nemours & Co., Inc.

No. 5937—Complete feed processing plant bulletin, Sprout, Waldron & Co., Inc.

No. 5938—Booklet on salt in animal nutrition, Salt Institute.

No. 5939—Brochure on fiber grinding equipment, Prater Pulverizer Co.

No. 5940—Dehulled soybean meal with added fat, Standard Feed & Fertilizer, Inc.

No. 5941—Use of antioxidant to control heating in fish scrap piles, Eastman Chemical Products, Inc.

No. 5942—Product to make silage "more appetizing and more nutritious," Kalo Co.

No. 5943—Pig anti-anemia product, Armour Veterinary Laboratories.

No. 5944—Bulk feed bodies, Henderson Manufacturing Co.

No. 5945—Bulletin on heavy duty

Send me information on the items marked:

☐ No. 5972—Swine Feeding Program Report
☐ No. 5973—Milk Fever Preventive
☐ No. 5974—Cage Layer Plants
☐ No. 5975—Feed Packer
☐ No. 5976—Bag Closer

(PLEASE PRINT OR TYPE)

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Meno Schoenbach

NEW APPOINTMENT—Clarence E. Elsas, president of Fulton Bag & Cotton Mills, Atlanta, Ga., has announced the appointment of Meno Schoenbach as advertising and sales promotion manager, with headquarters in Atlanta. He also will be responsible for the company's public relations program. Recently, all of Fulton Bag & Cotton Mills manufacturing and sales operations were consolidated in its integrated 1,250,000 sq. ft. Atlanta facility. Mr. Schoenbach joined the Fulton organization in 1954 and has been in New Orleans, La., for the past two years. His experience has included the operation of his own public relations and advertising agency, a career as newspaper publisher, and as a government public relations official.

vertical mixers, Sprout, Waldron & Co., Inc.

No. 5946—Bulletin on mill automation, Richardson Scale Co.

No. 5947—Storing and handling bulk materials, Day Co.

No. 5948—Mill operating manual, Prater Pulverizer Co.

No. 5949—Bulletin describing process pellet mills, California Pellet Mill Co.

No. 5950—Bulletin on chemical composition of meat meal and tankage, American Meat Institute Foundation.

No. 5951—"Twin Mixer" for mixing up to three tons capacity on either dry or molasses feed, Rapids Machinery Co.

No. 5952—Dust filter, Day Co.

No. 5953—Livestock equipment catalog, Brower Manufacturing Co.

No. 5956—Liquid feed supplement, U. S. Industrial Chemicals Co., Division of National Distillers & Chemical Corp.

No. 5960—Injectable form of poultry antibiotic, Abbott Laboratories Veterinary Division.

No. 5961—Booklet on animal fats in feeds, American Meat Institute Foundation.

No. 5962—Tape-bound bag closures with portable machine, Dave Fischbein Co.

No. 5963—Paper selector for multiwall paper bags, St. Regis Paper Co.

Egg Carton Inserts Available in Color

CHICAGO—Seven new types of egg carton inserts and two types of retail eggs counter strips, all in full color, are being made available by the Poultry & Egg National Board in time for use by the egg industry and retail outlets during National Egg Month (March), Lloyd H. Gell, PENB general manager, announces.

The egg carton inserts, 3x5 in. in size, feature the basic methods of preparing eggs. The face side of each insert spotlights a different four-color illustration of an egg dish, plus artwork and a slogan. A recipe is carried on the other side of each insert. Space is provided on both sides for rubber stamping a brand or company name.

The retail egg case strips, 3½ x 22 in. in size, are available with a four-color illustration of either fried eggs with ham or scrambled eggs with bacon. On the other side is an egg-shaped price block. The case strips also may be purchased with a brand name imprint between the illustration and price block, or in standardized form with a slogan promoting egg consumption.

A detailed price list and order form for the carton inserts and case strips is available from the Poultry and Egg National Board, 8 So. Michigan Ave., Chicago 3, Ill.

SUNSET FEED & GRAIN CO., INC.

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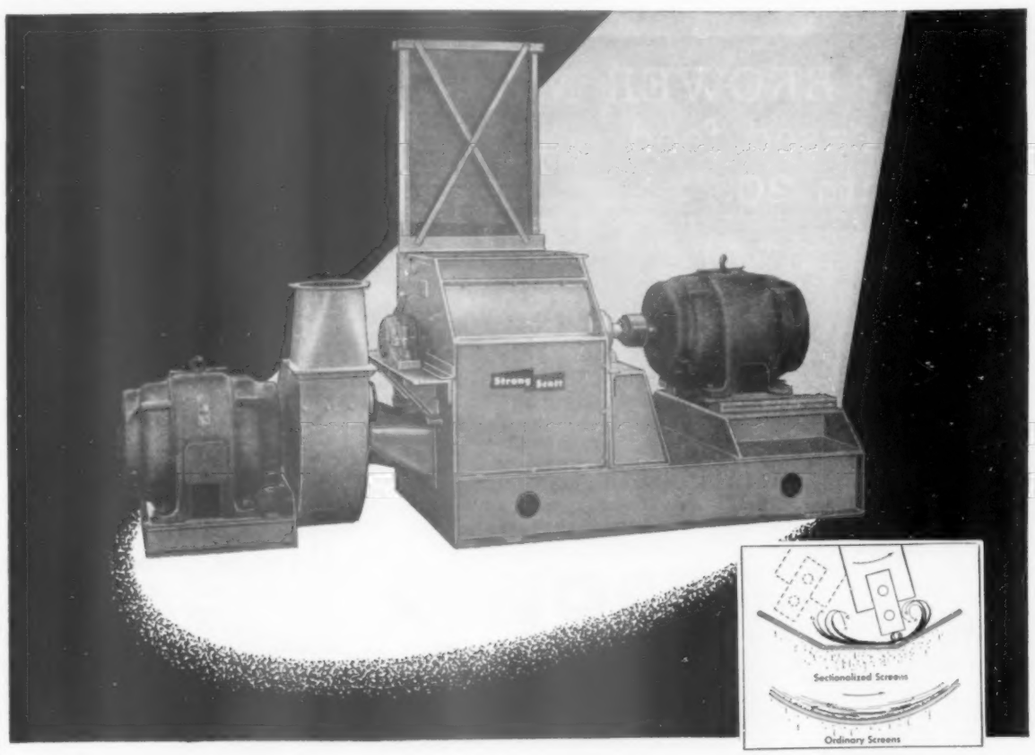

Strong-Scott presents a new idea in Hammermill operation

Sectionalized screens offer higher capacities through "Vortex Grinding Action"

The exclusive sectionalized screens in the new Strong-Scott Hammermill assure increased grinding capacities through "vortex grinding action" (see photo upper right).

Specially hardened screens . . .

Because the screens are flat, they can be subjected to a special hardening process and are guaranteed to wear 10 times longer than ordinary curved screens. This drastically reduces your production costs. The special hardening means the perforations retain their sharper edges and original size longer. This produces a more uniform, quality controlled product at a greater capacity for the entire life of the screens.

For your convenience, Strong-Scott maintains a "Production Testing Service," complete with their full line of Grinding, Mixing and Separating equipment. Write to Strong-Scott for full details of this no-cost service.

WITH VORTEX GRINDING, material cannot roll along the surface as on ordinary curved screens. Instead, the shallow valleys made by the joining of the screen sections bounce the material back into the grinding area. This produces an air attrition grinding of particle on particle, in addition to the impact grinding on the hammers, resulting in higher tonnages per hour.

REMOTE CONTROL SCREEN CHANGE—Only the new Strong-Scott Hammermill offers quick-changing up to seven screens from a remote location elsewhere on the floor above. Also, reversible rotation in this Hammermill adds to the long life of the screens.

Equipment Designed for Better Processing

The Strong Scott Mfg. Co.

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☐ New Hammermill Bulletin
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LIVER MEAL—VITAMIN OILS
FEATHER MEAL—FEED INGREDIENTS
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Terminal Elevator Storage Capacity Increases 4.5%

WASHINGTON—A 4.5% increase in commercial elevator storage capacity at terminal points as of June 1, 1957, has been reported in a survey made by the U.S. Department of Agriculture. It shows total grain storage capacity of 849,647,000 bu. in plants reporting commercial grain stocks, compared with 812,794,000 bu. a year earlier.

This increase, amounting to approximately 36,853,000 bu. storage capacity, occurred primarily in the Southwest and at Chicago. Lesser increases took place in the west and west central areas and on the Atlantic Coast. Capacity on the Pacific Coast declined 3.3%, mainly at Portland and the Columbia River ports and in the San Francisco Bay area.

The largest increase for any individual area occurred in the Southwest and amounted to 22,775,000 bu. The principal expansion of storage was at Ft. Worth; Hutchinson, Kansas; Lincoln, Neb.; Lubbock, Texas; Omaha and Council Bluffs; Salina, Kansas, and Sioux City, Iowa.

The second most significant increase was at Chicago, and amounted to 13,860,000 bu. for the year.

Some of the other markets in which substantial increases were made are shown in the following table:

Terminal	Increase (millions of bushels)
Ft. Worth	8.0
Lubbock, Texas	5.8
Lincoln, Neb.	4.2
Norfolk, Va.	2.2
Amarillo, Texas	1.8
Omaha, Neb.	1.5
Salina, Kansas	1.0

The following table gives the USDA figures on commercial capacity as of June 1, 1957, and June 1, 1956, at principal terminal markets:

TERMINAL ELEVATOR CAPACITY

(000's omitted)

Cities—	June 1 1956	June 1 1957
Atlantic Coast—	bu.	bu.
Baltimore, Md.	13,781	13,781
Boston, Mass.	1,880	1,880
New York, N.Y.	4,450	4,450
Norfolk, Va.	2,000	4,250
Philadelphia, Pa.	5,135	5,335
Portland, Maine	1,500	1,500
Total	28,746	31,196
Gulf Coast—		
Galveston, Texas	6,864	6,864
Houston, Texas	3,200	3,200
New Orleans, La.	5,122	5,122
Mobile, Ala.	1,450	1,450
Corpus Christi, Texas	2,000	2,000
Total	18,636	18,636
N. W. and Upper Lake—		
Duluth, Minn.- Superior, Wis.	60,500	60,500
Minneapolis, Minn	89,829	90,333
Total	150,329	150,833
Lower Lake—		
Buffalo, N. Y.	35,250	35,340
Chicago, Ill.	54,200	68,060
Milwaukee, Wis.	7,605	7,605
Toledo, Ohio	16,289	16,289
Total	113,344	127,294
East Central—		
Cincinnati, Ohio	2,550	2,550
Indianapolis, Ind.	13,300	13,300
Louisville, Ky.	5,380	5,380
Memphis, Tenn.	2,700	2,700
Nashville, Tenn	1,959	1,959
Peoria, Ill.	4,500	4,886
St. Louis, Mo.	22,125	22,125
Total	52,514	52,900
West Central, Southwestern and Western—		
Amarillo, Texas	10,245	12,095
Burlington, Iowa	1,200	1,200
Dallas, Texas	2,300	2,300
Denver, Colo.	2,071	2,071
Des Moines, Iowa	8,330	8,330
Enid, Okla	61,375	61,375
Ft. Worth, Texas	27,175	35,175
Hutchinson, Kansas	32,690	32,750
Kansas City, Mo.	61,730	61,730
Lincoln, Neb.	20,805	25,075
Lubbock, Texas	17,360	23,250
Ogden, Utah	3,000	3,000
Omaha, Neb.-Council Bluffs, Iowa	28,235	29,790
St. Joseph, Mo.	4,500	4,500
Salina, Kansas	22,750	23,750
Sioux City, Iowa	6,175	6,325
Wichita, Kansas	43,000	43,000
Total	352,941	375,716
Pacific Coast—		
Portland and Columbia River	68,335	64,500
Spokane, Wash.	2,102	2,102
Seattle and Tacoma, Wash.	14,511	14,511
San Francisco and Bay Region, Cal.	11,336	11,959
Total	96,284	93,072
Grand total	812,794	849,647

"Our BROWER MIXER increased feed profits 20%"

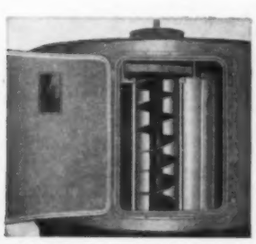
Says Ross Maddox, Ross Maddox Feed Co., Hot Springs, Arkansas

"Our Brower Mixer has increased our profits about 20% on the feeds we mix to sell. We also do custom mixing, and give the mixer credit for increasing the number of our customers about 10%. The mixer has given us the kind of trouble-free service that adds up to real satisfaction."

BROWER Whirlwind MIXER

Dependability, fast mixing action, and low cost operation make Brower the WORLD'S LARGEST SELLING MIXER! Brower action WHIRLS the ingredients instead of just stirring or tumbling them . . . produces the most thorough mix you can get. Every sack has the same even mixture.

FAST and ECONOMICAL—a perfect blend in about 10 minutes at a power cost of only 3¢ to 5¢ a ton. Five sizes —700, 1200, 2000, 3000 and 4000 pounds-per-batch mixing capacities. Above-floor and below-floor models. Heavy welded steel construction—built for years of trouble-free service.



Interior readily accessible through large hinged service door and hinged conveyor sleeve.

Notice the mixing paddle at top which WHIRLS the ingredients for the most thorough mix.

Glass observation window at eye level provides easy inspection of mixed feed at any time.

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World's Largest Selling Mixer

Oilseed Study Needs Listed by Committee

WASHINGTON — Research work aimed at isolating the factors in various oilseeds which are vital to increasing the feeding value of their meals was recommended by the U.S. Department of Agriculture's oilseeds and peanut research and marketing advisory committee at its annual meeting here.

The recommendation called for investigations in such oilseeds as soybean, linseed, tung, safflower and castor. Maximum value of these meals for animal feeds can be achieved only if more information about them is made available, the committee said.

Also recommended was research aimed at finding new industrial uses for the oils, new understanding of the nutrition of soybean and peanut plants, chemical-cultural weed control, insect control and off-farm handling.

Toledo Board Head Named to Second Term

TOLEDO — Fred M. Alexander, plant manager of General Mills, Inc., feed division, Rossford Ohio, was elected to the second term as president of the Toledo Board of Trade at the board's recent election. Other officers reelected were Sam Rice, Jr., Rice Grain Co., first vice president; Don M. Mennel, Mennel Milling Co., second vice president; P. M. Barnes, Lansing Grain Co., treasurer, and A. E. Schultz, secretary. Directors elected were William L. Adler, National Biscuit Co.; Paul Atkinson, Norris Grain Co.; G. J. Forrester, Forrester Grain Co.; T. B. Irish, Spencer Kellogg & Sons, Inc.; K. R. Lenhart, Cargill Incorporated; E. W. Peters, Wirthmore Mills, and L. J. Schuster of L. J. Schuster Co.

J. E. McCabe

Merck Reorganizes Sales, Marketing

RAHWAY, N.J.—Reorganization of the sales and marketing operations of the chemical division into four separately-functioning departments has been completed by Merck & Co., Inc., Rahway.

According to the Merck announcement, each department will operate in specialized areas under the supervision of a marketing director.

J. E. McCabe was named head of the agricultural products department. Mr. McCabe was previously director of market planning. His department will plan and carry out the marketing of products to the feed and animal health fields. Other members of the department are J. R. Warren, sales manager; D. K. Richards, agricultural products manager, and D. G. Stephen, animal health products manager.

Other new department supervisors are H. P. Sarkison, medicinal products; R. W. Hayes, general products, and G. C. Moore, distributive products.

T. J. Treacy, director of sales and marketing, to whom the four departmental directors will report, declared that applying the principles of specialization and decentralization by type of business will improve customer relations and service.

Among other advantages expected from combining marketing and sales functions within each department, are more clearly defined lines of authority and greater freedom to make and execute plans.

Confinement-Raised Birds Produce More

ST. JOHN'S WEST, NEWF.—Pullets raised in confinement produced more eggs on less feed per dozen eggs than pullets raised on grass range in a test at the Experimental Farm, St. John's West, Newfoundland.

Results of the experiment were published recently by the Department of Agriculture at Ottawa.

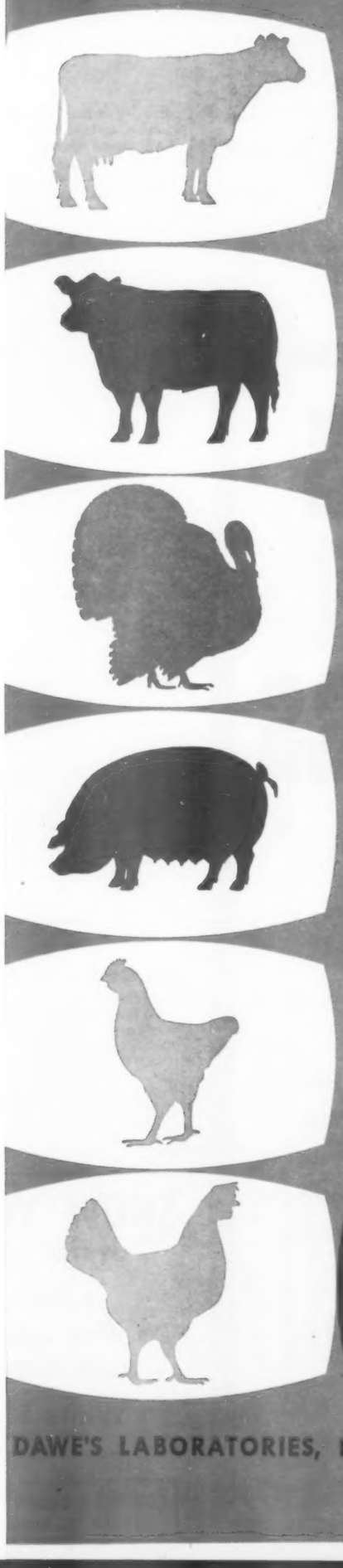
In a laying trial covering 14 months, 360 in-cross hybrid hens raised in confinement were compared with 360 hens from the same hatch raised on grass range, according to H. W. R. Chancey, superintendent of the farm at St. John's West.

Average egg production of the birds raised on confinement was 65% compared with 62% for birds raised on range. The confined birds also required less feed per dozen eggs, or 4.8 lb. as compared with 5.1 for those on range.

Egg size apparently was not affected. Mortality was much lower for the birds in confinement during the laying period, Mr. Chancey reported.

He said the experiment will be concluded at the end of two laying periods (approximately 23 months) to assess the full effect of these two rearing methods.

In DAWE'S Vitamelk Programs



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1. **VITAMELK**—a comprehensive vitamin, trace mineral, antibiotic and unidentified factors fortifier. *Full* fortification in one package.
2. **COMPLETE FORMULATIONS** for farm-tested feeds.
3. **TAG INFORMATION** for today's complicated feed tag requirements.
4. **COMPLETE FEEDER INSTRUCTIONS** on how to use Vitamelk-fortified feeds to best take advantage of their great built-in power.
5. **DAWE'S QUALITY CONTROL** laboratories are a remarkable help in solving special problems.
6. **MERCHANDISING** and sales counsel.
7. **CONTINUING RESPONSIBILITY** for applying the latest nutritional knowledge to *your* feeds.

Dawe's specialized nutrition, manufacturing and merchandising know-how is yours—yet you pay for Vitamelk only—when you program your business the Vitamelk way. Write for specific information on complete programs for poultry, swine, beef and dairy cattle.

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Feed Service Bulletin Board

Helpful Notes on Feeding and Management for Feed Men and Their Customers

Extra Heat Lamp Values

Here are some of the finer points on a subject many hog producers feel they're up on already—use of heat lamps for baby pigs. To begin with, hang a heat lamp over the sow a few hours before farrowing. The heat will help her relax. Hang this lamp 6 in. above the sow's back when she's in a standing position. Let the pigs have their own heat lamp, in the creep area. They soon discover these cozy corners and will go back to them for warmth, instead of to the sow.

All lamps should have porcelain sockets, heat-resistant cords and an Underwriters' Laboratories (UL) tag of approval. Metal, plastic or rubber sockets won't stand the heat, and become a fire hazard.

Hang lamps by a chain, of course, instead of the light cord. Avoid long extension cords, and keep cords and lamps out of reach so sows can't chew on the cord or break a lamp. So-called reflectors on heat lamp fixtures are really drip shields—heat lamp bulbs have built-in reflectors. Hard glass lamps won't break when a drop of condensed moisture strikes them, but not all red lamps are of the hard glass type. Some are only colored to cut down the amount of light they give.

Swine specialists and agricultural engineers emphasize that the most critical time in the life of a pig is the first few hours after birth, when about 25% of all losses occur as a result of chilling or crushing; and apout 75% of all pig losses take place within two days after farrowing. Heat lamps may cost from 9 to 18¢ daily to use during the first few days of continuous use, but pigs saved mean far more money saved.

◆

Watch Late Winter Rations

During the late winter months, cattle producers should check their rations to make sure their animals are receiving adequate amounts of carotene, or vitamin A. Symptoms of a deficiency of this vitamin include diseases of the respiratory tract. One of the first symptoms, says Ed Smith, Kansas State College animal husbandman, is night blindness or lack of sight in dim light. Other common symptoms are nasal discharge with sometimes a cough and scours. A characteristic symptom in fat cattle is swelling of the legs.

◆

Egg Coolers Needed

Laying flock owners with about 1,000 birds may find a cabinet cooler very satisfactory, while flocks of around 2,000 justify a room-type cooler, but all farmers in the egg business need an egg cooler, says Merle Esmay, Michigan State University agricultural engineer. The best cooling results from putting the eggs in the cooler as quickly as they're

2 GREAT FEEDS FROM SCHENLEY:
CORN DISTILLERS DRIED GRAINS & SOLUDRI

Distillers Dried Grains are a popular protein supplement for dairy cows and are a favorite ingredient in concentrate mixture for cattle. They are especially valuable for milk production when other feeds in the ration are low in fat. Soludri (Corn Distillers Solubles Dried) is the booster ingredient with completely balanced B-G Complex of vitamins.

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Prompt shipment anywhere
on A and D^3 vitamins.

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Get SPROUT-WALDRON'S Big Plus in grinders, cutters, crushers

QUICK-SCREEN-CHANGE
PAYMA$TER
HAMMER MILL

With Paymaster, you can switch screens in seconds while machine is running. The changing of the screen cannot be fouled up, not even by foreign materials ripping the screen, or roughage accumulating behind it. Remote control—manual or electrical. Delays between grinds are completely eliminated. Write for Bulletin 110.

From beginning to end, Sprout-Waldron's **BIG PLUS** can save you time, trouble, and money. You get unmatched ability to plan and provide the best installation to meet your specific requirements...

PLUS the widest possible selection of grinders, cutters, crushers, and auxiliary equipment...all adaptable to individual needs...

PLUS unbiased recommendations, because Sprout-Waldron offers all types and sizes of size reduction equipment...

PLUS specialized engineering skill that can cut your first costs and minimize the continuing costs of production...

PLUS the industry's most extensive research program that continually develops and applies new cost-cutting designs and methods...

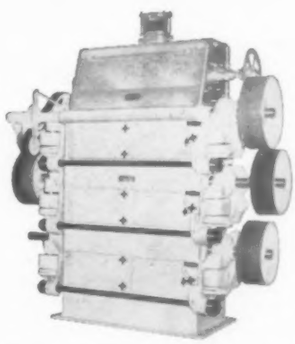
PLUS sales, service, and manufacturing facilities unequalled in the field...

PLUS A RELIABILITY based on 90 years of service to the feed industry and a desire to continue serving you year after year...

These extra values are yours at no additional cost when you do business with Sprout-Waldron.

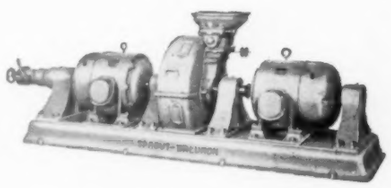
SIDE-SCREEN-CHANGE HAMMER MILL

Screen changes are a matter of seconds with the side-screen-change mill... while the machine is running. Torn or clogged screens cannot hamper the changes. Unusual design provides high capacity, lower consumption. This mill specifically meets the problems of the custom miller and is within the price range of the smaller manufacturer. Write for details.



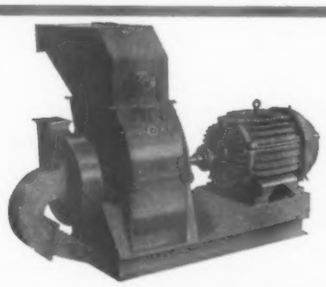
ROLLER MILLS

Sprout-Waldron offers America's most complete line of roller mills for every feed mill purpose, and famous Buhler Roller Mills for flour production. Write for details.



ATTRITION MILLS

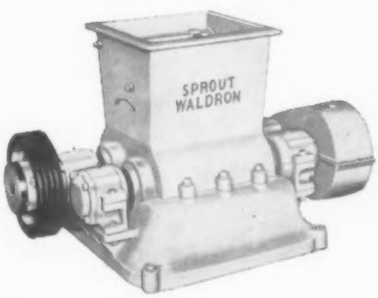
No other grinders last as long or grind as much at as low a cost as Sprout-Waldron Attrition Mills. Available from 5 to 500 h.p. Belt or motor drives. A plate for every purpose. Write for Bulletin 144.



CUSTOM GRIND HAMMER MILLS

They'll outgrind and outlast any other hammer mill of equal size and weight under the same power conditions. Available in 14", 18", 24" rotor widths. Rotor speed: 3500. Write for Bulletin 122.

HEAVY-DUTY MODELS available 50 to 100 h.p. Rotor speed: 3500. Rotor width: 18". Ask for Bulletin 1-B.



CRUSHERS

A perfect answer to almost every coarse size reduction or crushing problem can be found in Sprout-Waldron's large line of crushers. Ask for complete information.

CORN CUTTERS

Smooth, diced, coarse-cut corn can be produced from any kind of corn—day in, day out—with Sprout-Waldron Corn Cutters. Unique design and simplified, sturdy construction provide highest production per horsepower and per square foot of floor space with lowest maintenance cost. 2 models, 5 sizes. Write for Bulletin 102.

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No, but this common stone may cost you its weight in gold if it enters your sheller.

The Anderson STONE SLEUTH is a proven remedy to this headache.

Here is a modern instrument guaranteed to detect stones and other foreign objects present among ear corn before they can cause breakdowns and costly delays in your shelling operation. Let us tell you how the STONE SLEUTH can save you money.

FOR INFORMATION, WRITE: The Andersons MAUMEE, OHIO

gathered, to get the temperature of the eggs down to 55 degrees as soon as possible. The engineer prefers a mechanically-cooled unit. He believes this is the only way to make sure the temperature stays around the recommended 55 degrees and the humidity around 80%.

Poultrymen selling eggs for hatching purposes should watch especially close to see that storage temperatures don't go above 68 degrees or below 35 degrees. The egg cases should be tilted from end to end twice daily with these hatching eggs.

◆

Egg-Washing Steps

Here's a six-step egg washing system recommended by a Michigan State University poultry researcher, Lawrence E. Dawson: Use water at 110-120 degrees; don't wash longer than five minutes; use clean water, changing every day or every 6-10 baskets; use a recommended detergent-sanitizer; dry the eggs well, immediately after washing, and market the eggs often. Remember, too, it's important to wash these eggs soon after gathering to do an effective job.

"Yes, there's real feed in this sack with me, and you're to take my word for it."

◆

Baby Pig Diseases

It's easy to confuse some of the baby pig diseases farmers are encountering this time of year and, for this reason, they should consult a veterinarian from time to time. One non-infectious disease or stress condition they may have is low blood sugar, also known as hypoglycemia. It occurs the first week of life. The cause is unknown, but sows which lactate poorly and chilling of young pigs are predisposing factors. The pigs may show nervousness and subnormal body temperatures and even, in later stages, go into convulsions and coma. The pigs should be kept warm and injected intravenously with sugar to insure survival.

Central Arkansas Man Expands River Traffic

AUGUSTA, ARK. — An Augusta grain man, Murray Lockhart, has been successful in an experiment which is expected to bring reduced shipping costs in this part of central Arkansas.

He had been considering the use of barge shipment on the White River for the past two years as a way to reduce freight charges, and recently decided it was feasible after discussing the problem with the Standard Commission Co., Memphis brokerage firm.

The towboat Ethel Woods tied up at his new loading platform recently with the largest tow of barges ever brought up the White River to Augusta. Until now, according to a report of the project, few people ever considered the river as being navigable for anything other than small craft that far upstream.

Mr. Lockhart loaded $184,000 worth of soybeans onto the barges and sent them back downriver to the Mississippi, where the barges were picked up and sent to Chattanooga, Tenn.

PLANS NEW ELEVATOR

GOODLAND, KANSAS — The Goodland Cooperative Equity Exchange will erect a new 500,000 bu. concrete, silo-type elevator here. The present elevator has a capacity of 125,000 bu.

STORE SALES DOUBLED

when we switched 100% to

RED HAT FEEDS

Mr. and Mrs. Stewart going over increased feed-sale figures.

Mr. and Mrs. Roscoe Stewart of the Stewart Feed and Seed Company, Abbeville, Alabama, are enthusiastic over the two-fold profit of being a *100% Red Hat dealer*. Since switching to this complete line, feed sales have gone up and store sales have doubled. In Roscoe Stewart's own words: "A quality feed like Red Hat sells as high-demand merchandise . . . can't be matched in the field today!" *Quality always pays* . . . selling a complete line of Red Hat Feeds builds profits through proved grower results!

ALABAMA FLOUR MILLS · Decatur, Alabama

Use Your Own Salt and Calcium with Herman Nagel's Formula B PHOSPHOROUS CONCENTRATE WITH TRACE MINERALS

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in a form so soluble "It melts on your tongue."

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Chicago 4, Illinois

OLD BUILDING-PROGRESSIVE OPERATION—Only the building is old. Inside this building, Harold C. Ott, present owner of the 75-year-old firm, has a modern, progressive feed operation. Mr. Ott believes the man who asks for credit should pay something for it, and has put a 5% cash discount on his feeds. This, he says, has licked his collection problem. He handles his own line of feeds and in the lower right section of the building has a feed store which he plans to enlarge.

IN NEW JERSEY

Cash Discount Really Works; Feed Man Licks Collections

Harold Ott believes that those who want credit should pay for it, and the man who pays cash should get a lower price

By Al P. Nelson
Feedstuffs Special Writer

There is hardly a collection problem at the W. A. Jones & Son feed mill and store at Mullica Hill, N.J.

The reason is that the owner, Harold C. Ott, offers a 5% discount for cash, and practically all farmers in the area who buy from Mr. Ott take advantage of this saving. Mr. Ott believes that the man who wants credit should pay for it. Likewise, he believes that the man who pays cash should get a lower price.

"When you consider the cost of handling a charge account, including the bookkeeping charges, the collection efforts, the loss of interest on your capital which is tied up until the customer pays, the interruption in your store operation due to necessary collection calls, etc.," pointed out Mr. Ott, "then that 5% discount doesn't look very large. We like to get a quick turnover on our capital, and this way we get it and at a profit, too."

The collection work at this mill is very light, stated Mr. Ott. Because he does have so few charge accounts to watch, this leaves him more time for other mill operation duties.

Mr. Ott, who bought this 75-year-old business several years ago, said that most of his feed business—over 50%—is done with established dairy farmers. The farmers get paid monthly for their milk and are able to pay for their feeds as they get them.

Mr. Ott considers 30 days as a cash basis, and he bills the farmer at the credit price if he wants a few weeks to pay for his feeds. Then, when he pays, he gets 5% taken from the bill. If he doesn't pay, the higher price prevails.

Because many of his customers are dairy farmers, this involves the use

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NUTRITIVE FEEDS

MIX
PRODULAC
CORN DISTILLERS SOLUBLES WITH GRAINS
BOTH GRAIN FERMENTATION PRODUCTS
NADRISOL
CORN DISTILLERS DRIED SOLUBLES

These economy fortifiers are rich in proteins, vegetable fats, and highly nutritious. They also contain essential Vitamin B-G Complex factors, as well as unidentified growth factors. Mixing Nadrisol or Produlac in your formula feeds will promote quicker growth, greater meat and egg yield and will produce feeds your customers want to buy. It's a good way to gain and hold customer acceptance.

Sold only to manufacturers of formula feeds.

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"SNAP-IN" GREASE SEALS
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Cut Your Pelleting Costs
DIMPLE-FACED PELLET MILL ROLLERS
for More Production!

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From the Research Department of Landers Mill Manufacturing Company comes another FIRST to cut your pelleting costs. Our new "Snap-in" Grease Seal provides new seals for your Pellet Mill at a fraction of the previous cost. This fine product has been thoroughly field-tested.

"SNAP-IN" seals can be installed or removed in a matter of seconds, with no hammer or press needed. You can save $8.00 per set of rolls each time the shells are changed. Original cost is comparable to conventional grease seal, with replacement cost of only 50c. Housing can be used over again repeatedly.

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INGREDIENTS
OF ALL KINDS

of a great deal of home-grown grain in the feeding operations. To aid farmers and to build his own business, Mr. Ott will call for the farmer's grain, bring it to the mill and grind and mix it, and then take it back to the dairy farm.

"We usually call on a farmer when he starts to buy from us," Mr. Ott said, "and we discuss the formula he wants on his dairy feeds. We keep this on file in the mill office, and whenever we get a call to haul his grain in, we know exactly how to mix it to suit him, unless he advises us differently."

This progressive dealer stated that dairy farmers in his area are perhaps more conservative in buying habits than in some other states. They like to establish relations with a reliable dealer who can give them the grinding and mixing service they need. Once they find such a dealer they'll stick with him if he continues to give them good service, Mr. Ott said.

"Many of our dairy customers like to drop in at the mill during the winter season when they have a little more time than usual and discuss their feeding formulas," Mr. Ott stated. "I always take time to talk with them, and I also make outside calls when I have the time."

This mill may be old from the standpoint of years, but it has had modern equipment installed in recent years. The equipment includes a Sprout-Waldron molasses blender, a Schutte hammermill, an S. Howes grain cleaner, a Munson 1-ton mixer and a Munson ½-ton mixer. He also has two corn crackers.

Mr. Ott manufactures his own brand of feeds. The line is called Jones Special Feeds, and it includes poultry, dairy, hog and cattle feed, all of which sell well in this part of New Jersey.

Stays Close to Home

"Trade areas are rather restricted in this state compared with many others," Mr. Ott said. "I try to sell all my feeds within seven miles of my store and mill. I think it is more profitable to cultivate customers close to home than to wander too far afield. Dairy feeds used in this area vary from 14% protein up to 32%."

The farmers in the region raise barley, corn, soybeans and alfalfa. Mullica Hill is also the center of a fine tomato, carrot and asparagus region. One of the leading soup companies has a huge tomato buying station directly across the road from the Jones mill. This brings many farmers to the area, of course, some of whom patronize the Jones mill because it is so handy.

"We do not have a grain bank plan," Mr. Ott said. "Our storage facilities are small, and we find we can get and keep the trade by our program of calling for the farmer's grain and delivering it back to him processed the way he wants it. The farmer today likes to stay on his farm, due to scarcity and high price of farm labor. Therefore, he appreciates a 'call-for-grain' service very much."

During the past two years, Mr. Ott has partitioned a 15-by-35-ft. area of his mill for an office and farm supply store. In the store there is wall shelving and home-built counters and islands. On these fixtures Mr. Ott displays a wide variety of merchandise such as farm hardware, plumbing and electrical supplies, insecticides, sprayers, carpenter tools, electric motors and garden and lawn tools.

"We are very happy about this farm supply store and its high volume," Mr. Ott said. "We think such a store can be a profitable part of many feed businesses. In fact, we are planning to enlarge this department within the next year. Farmers need the items we sell here, and why shouldn't they buy them at the same time they get their feeds?"

Canada Cattle Receipts Show Increase in 1957

WINNIPEG — Livestock statistics issued for 1957 by the Canada Department of Agriculture show that total receipts of cattle at public stockyards and packing plants were 2,467,972 head, compared to 2,299,266 in 1956. In addition, a total of 204,247 head of feeder cattle was exported to the U.S. during the year, compared to 336 in 1956.

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RUMEX has been used for many years as an aid in preventing and treating feeding problems resulting from non-infectious rumen dysfunction, such as conditions due to change of environment, switching from pasture to dry lot feeding, bloat, poor appetite and such other conditions requiring the re-establishment of the natural flora. RUMEX aids in correcting lack of appetite and in avoiding simple types of scours.

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CONVENTION CALENDAR

Feb. 23-25 — Ohio Grain & Feed Dealers Assn.; Commodore Perry Hotel, Toledo, Ohio; sec., G. E. O'Brien, Ohio St., Greenville, Ohio.

Feb. 23-25 — Colorado Grain, Milling & Feed Dealers Assn.; Shirley-Savoy Hotel, Denver; sec., R. B. Kelley, 714 Cooper Bldg., Denver 2, Colo.

Feb. 24-27 — Colorado Livestock Days; Colorado State University, Fort Collins, Colo.; sec., Dr. Sherman S. Wheeler, director of the experiment station.

Feb. 25—Cattle Feeders Day, Iowa State College, Ames; Dr. Wise Burroughs, Animal Husbandry Dept.

Feb. 25-26 — Virginia Polytechnic Institute Nutrition School for Feed Men; Hotel Roanoke, Roanoke, Va.; chm., Paul M. Reaves, professor of dairy science.

Feb. 26-27—Midwest Feed Manufacturers Assn.; Muehlebach Hotel, Kansas City; exec. v.p., Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

March 12—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati, Ohio; exec. dir., Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

March 13-14—Oregon Feed & Seed Dealers Assn.; Multnomah Hotel, Portland, Ore.; sec., Fenn Emerson, Albany, Ore.

March 20-21—University of Maryland Nutrition Conference, Shoreham Hotel, Washington, D.C.; Dr. R. D. Creek, Department of Poultry Husbandry, University of Maryland, College Park, Md.

March 20-22 — Pacific Dairy and Poultry Assn.; Hotel del Coronado, Coronado, Cal.

March 24-25—Arkansas Beef Study Day; University of Arkansas, Fayetteville, Ark.; chm., Dr. C. J. Brown, associate animal husbandman.

April 8—Purdue Egg Day; Purdue University, Lafayette, Ind.; chm., David D. Jackson, extension poultryman.

April 8—New Hampshire Poultry Growers Assn.; Memorial Union Bldg., University of New Hampshire, Durham, N.H.; sec., Richard Warren, extension poultryman.

April 10-11—Poultry & Egg National Board; LaSalle Hotel, Chicago; Lloyd H. Gell, general manager, 8 S. Michigan Ave., Chicago 3, Ill.

April 16—New England Branch of Poultry & Egg National Board; Framingham, Mass., Country Club; chm., Waldo W. Chick, Wells, Maine.

April 17-19—California Hay, Grain & Feed Dealers Assn., Ambassador Hotel, Los Angeles; sec., John F. Gilmore, 1400 10th St., Sacramento 14, Cal.

April 18—Nebraska Feeders Day, University of Nebraska, College of Agriculture campus, Lincoln; chm., Prof. William J. Loeffel, Department of Animal Husbandry.

April 23-24—Texas Feed Manufacturers Assn., Baker Hotel, Dallas, Texas; sec., Ben E. Schmitt, 528 Bewley Bldg., Ft. Worth, Texas.

April 25-26—Texas Grain & Feed Dealers Assn.; Baker Hotel, Dallas, Texas; sec., Ben M. Ferguson, 614 Meacham Bldg., Ft. Worth, Texas.

May 1-3 — Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

May 4-5—Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

May 4-6 — National Cottonseed Products Assn.; Atlanta Biltmore Hotel, Atlanta, Ga.; sec., John F. Moloney, P.O. Box 5736, Memphis 4, Tenn.

May 10-14—Grain Elevator & Processing Superintendents; Minneapolis, Minn.; sec., Dean M. Clark, 1115 Board of Trade Building, Chicago 6, Ill.

May 21-23—American Feed Manufacturers Assn.; Morrison Hotel, Chi-

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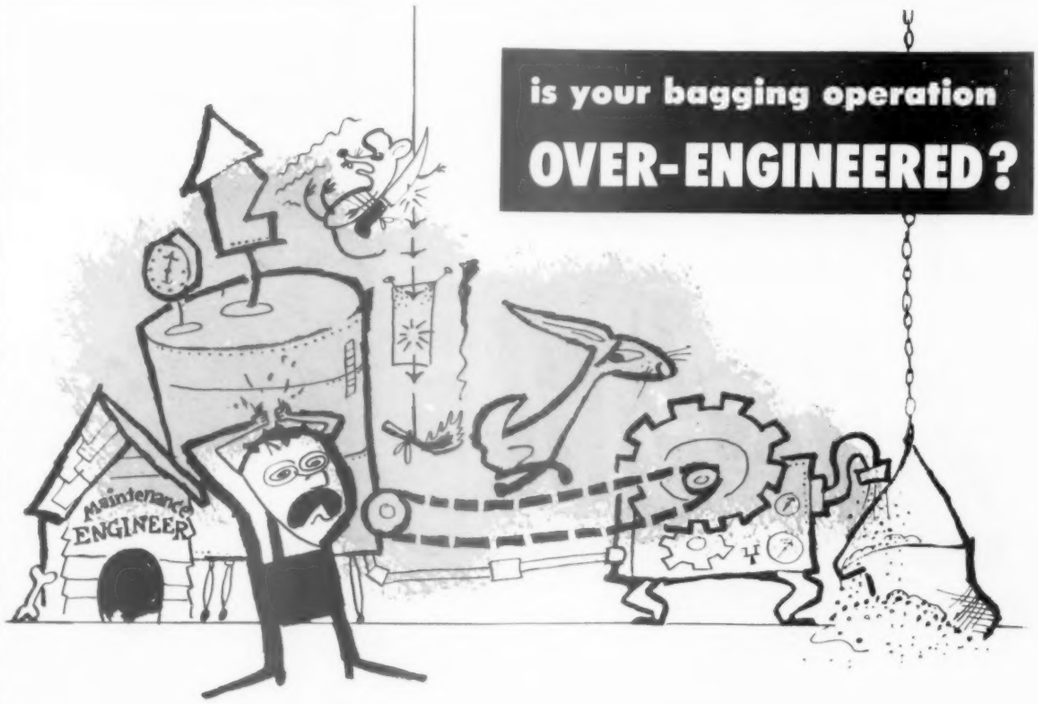

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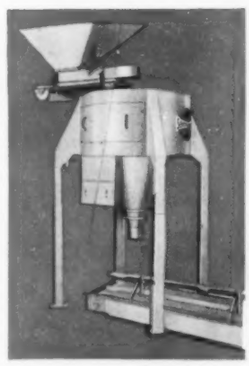

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June 1-3—Indiana Grain & Feed Dealers Assn., mid-summer convention; French Lick-Sheraton Hotel, French Lick, Ind.; exec. sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 8-10—Eastern Federation of Feed Merchants; Whiteface Inn, Whiteface, N.Y.; exec. dir., Austin W. Carpenter, Box 66, Sherburne, N.Y.

June 9-11—Association of Southern Feed & Fertilizer Control Officials; Heart of Atlanta Motel, Atlanta, Ga.; sec.-treas., Bruce Poundstone, University of Kentucky, Lexington, Ky.

June 10-12 — Alabama Poultry Industry Assn.; Auditorium, Birmingham, Ala.; exec. sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 16-18—American Association of Feed Microscopists, Chateau Laurier, Ottawa, Canada; sec., G. M. Barnhart, Missouri Department of Agriculture, Jefferson City, Mo.

June 26-28 — Delmarva Chicken Festival; Denton, Md.; chm., John Asher, R.F.D. No. 2, Box 35-A, Georgetown, Del.

June 27-30—Canadian Feed Manufacturers Assn.; Murray Bay, Quebec; conv. sec., Rachel Beauchamp, 110 St. Paul Street, East, Montreal, Canada.

June 28-July 1—Georgia Feed Assn.; General Oglethorpe Hotel, Wilmington Island, Savannah, Ga.; sec.-treas., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5.

July 18-19—Kansas Seed Dealers Assn., Hotel Broadview, Wichita, Kansas; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

July 22-25 — American Poultry & Hatchery Federation; Cleveland Auditorium (Ohio); convention mgr., Ed G. Gray, 521 E. 63rd St., Kansas City 10, Mo.

Sept. 17-19—National Feed Ingredients Assn., Congress Hotel, Chicago, Ill.; sec., Peter W. Janss, 212 Equitable Bldg., Des Moines, Iowa.

Sept. 25-26 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville, Ark.; chm., Prof. E. L. Stephenson, Department of Animal Industry and Veterinary Science.

Oct. 7-9—Northeastern Poultry Producers Council Poultry Exposition and Convention; Farm Show Bldg., Harrisburg, Pa.; chm., Alfred Van Wagenen, NEPPCO, 10 Rutgers Place, Trenton 8, N.J.

Oct. 8-10—Texas Nutrition Conference; Texas Agricultural and Mechanical College; College Station, Texas; chm., J. R. Couch, Poultry Science Dept.

Oct. 14-16 — Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., L. E. Bopst, University of Maryland, College Park, Md.

Oct. 16-17 — Oklahoma Formula Feed Conference, Oklahoma State University, Stillwater, Okla.; chm., Dr. Rollin H. Thayer, Poultry Science Dept.

Oct. 23-25—Nutrition Conference, Alabama Feed Assn.; Alabama Polytechnic Institute, Auburn, Ala.; chm., Merlin T. Bryant, Brundidge Milling Co., North Main St., Brundidge, Ala.

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Broiler Council Board Adds 2 New Members

ATLANTA, GA.—Two new broiler industry leaders have been elected to the board of directors of the National Broiler Council, officials of the organization announced. Directors from the southeastern region were elected at a meeting of delegates held during the recent Southeastern Poultry & Egg convention.

Newly named to the NBC board were Willard Adcox, Dalton (Ga.) Poultry Co., and Charles C. Miller, Jr., Miller Feed & Poultry, Piedmont, Ala.

Others from the Southeast serving on the broiler council board include: J. B. Beasley, Jr., Sweet Sue Poultry Co., Athens, Ga.; Ralph W. Cleveland, Gainesville (Ga.) Milling Co.; Harold H. Earthman, Murfeesboro, Tenn., vice president at large; Ray E. Firestone, Firestone & Co., Troutville, Va.; Fred L. Gaddis, Gaddis Industries, Forest, Miss.; Brooks Herman, Oak Crest Poultry Farm, Jacksonville, Fla.; Jesse Jewell, J. D. Jewell, Inc., Gainesville, Ga., immediate past president; E. S. Kendrick, Lovette Feed Co., N. Wilkesboro, N.C.; H. C. Kennett, Farmers Exchange, Durham, N.C.; Homer R. Kline, Inc., Harrisonburg, Va.; B. C. Rogers, B. C. Rogers & Son, Morton, Miss.; Joe F. Sanderson, Sanderson Bros., Laurel, Miss.; W. R. Shaffer, Shaffers' Inc., Woodstock, Va.; Willard Strain, Strain Feed & Coal Co., Dalton, Ga.; Henry C. Tilford, Jr., Dixie Grain Co., Shelbyville, Tenn., and Charles Vantress, Vantress Farms, Duluth, Ga.

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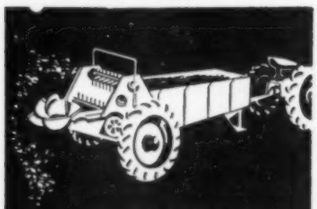

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DANNEN

Better Feed-Veterinary Relationships

The need for better relationships between feed men and veterinarians has been getting increasing attention. Frequently there is poor cooperation between the average veterinarian and the average feed man on the local level. However, it is impossible to separate health from nutrition, and for either to be most effective, the cooperation of the other is needed—particularly at the grass roots level.

Among those working to improve relationships between the feed man and the veterinarian is the Midwest Feed Manufacturers Assn. For example, in Nebraska, the association helped organize veterinarian and feed man committees which have held joint meetings to work on the problem.

As part of a talk at a meeting of Nebraska veterinarians, Lloyd Larson, executive vice president of the Midwest association, presented slides showing just how the local feed man and veterinarian could become better acquainted and then work together to their mutual benefit and the benefit of farmers. Some of the pictures in Mr. Larson's presentation are shown here. They were taken in a Wisconsin community where Mr. Larson knew the local feed man.

Mr. Larson also spoke at a recent meeting of the Kansas Veterinary Medical Assn. As a result, the veterinarians appointed a committee to work with feed manufacturers.

ONE—This mill in Wisconsin is typical of hundreds of mills doing a good job of serving farmers. The feed man, Mr. Colrud, had thought about calling the vet in his area, but just never got around to it. Why doesn't he do it now? "Good idea," he said. "I will."

TWO—So the local feed man calls the local veterinarian—the first step in a better relations program.

THREE—"Yes, this is Dr. Brekke. Sure, Mr. Colrud, glad to have you drop over anytime. Now—why, of course, come right over."

FOUR—"I'm glad to meet you, Dr. Brekke. Been going to do this for a long time. Seems a shame we do business in the same area, with the same people, and not know each other. It's about time we got acquainted. What do you say we have a cup of coffee?"

FIVE—It's surprising what a cup of coffee will do to pave the way for conversation and solution to many problems. "Say, Dr. Brekke, you should come over and visit my mill." "I'll be glad to," replies the doctor.

SIX—"We don't have a fancy or pretentious mill, Doc, but we do have the machinery to grind and blend the farmer's grains with concentrates to give him a balanced ration at lowest cost. A lot sure has happened in this field of nutrition, and we look to our source of supply, the feed manufacturer, to help us. By the way, how would you like to go along with me on a farm call? One of my customers called this morning about some of his dairy cattle." Says the vet: "Sure, be glad to."

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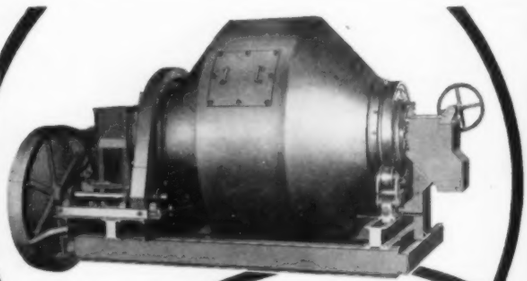

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SEVEN—The local feed man introduces the veterinarian to the farmer and explains that he brought him out to look at the herd.

EIGHT—The feed man and vet look over the farmer's herd, and the vet observes and discusses the problems. He looks at a new arrival, too.

NINE—The veterinarian prescribes what he feels will best serve the farmer in this case. He even double-checks with the feed man for his concurrence—might even suggest that a special formula be mixed by the feed man—all this to the farmer's satisfaction in seeing teamwork solve his problem.

TEN—Later that evening, the vet and feed man bring the wives in the deal, and they, too, get acquainted. So, we have the beginning of what could be a lasting, mutually beneficial relationship—all because someone made the first move to get acquainted.

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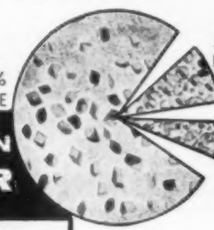

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FE/445

What's New in Feeding — Putting Research to Work

Nutritional Factors Affecting Broiler Carcass Composition

The production of a carcass with characteristics desired most by the consumer is as much a problem for the broiler grower as it is for the pork producer. Their problems differ only in that the broiler grower is striving to get greater fat deposition while the swine producer is attempting to achieve the opposite in his product.

The synthetic production of various estrogenic compounds, thyroprotein preparations and goitrogenic compounds has stimulated interest in recent years in the possibility of economically using these substances in production of meat and eggs. Some of these compounds have marked effects on rate of growth and fat deposition in chickens. This report will cover some of the more recent work conducted with these and other compounds.

Hebert and Brunson of Louisiana Agricultural Experiment Station reported in the July, 1957, issue of Poultry Science on experiments with diethylstilbestrol, testosterone, thiouracil and thyroprotein. They learned that the subcutaneous implantation of a diethylstilbestrol pellet in five-week-old male broilers caused an increase in carcass fat but decrease in moisture and protein. Growth was not markedly affected, but feed conversion was significantly reduced by the treatment. Females injected with testosterone propionate did not differ significantly from the control females in regard to carcass composition, growth or feed conversion.

Hebert and Brunson also found that the addition of 0.22% thyroprotein to the basal ration during the nine-week growing period produced a significant increase in moisture content. No real differences in protein and ash content were evident. Carcass fat content was significantly lower than the controls. Feed conversion figures for the control birds were also significantly superior to the treated birds, but there was no real difference in gain in body weight. They also found that the addition of 0.2% thiouracil to the basal ration from five to nine weeks of age significantly increased carcass fat and significantly reduced the protein, moisture and ash contents. Mean body weights were lower and feed conversion was inferior in the treated birds when compared with the controls, but differences were not significant.

Jukes, Hill and Branion of Ontario Agricultural College report in the March, 1957, issue of Poultry Science on the effect of penicillin on carcass composition of the chick. They noted that the addition of penicillin to the diet caused a moderate increase in body fat and a small reduction in percentage of moisture, protein and ash. While the birds receiving the penicillin had a greater average weight than their controls, the increase could not be accounted for solely by an increase in fat.

Caloric Content

Another nutritional factor affecting carcass composition is the caloric content of the ration. Harms, Hochreich and Meyer of the University of Tennessee (March, 1957, Poultry Science) fed chicks three diets containing 793, 881 and 978 calories of productive energy per pound of feed. They found that the dressing percentage of the birds increased as the energy content of the diet increased. The birds receiving the diet which contained 978 calories, provided for in part by 6.3% stabilized yellow grease, had the highest percentage eviscerated yield of any of the birds fed the different feeds. These same birds also had the least cooking loss due to evaporation. When the birds were broiled, it was noted that the drippings tended to increase as the calorie-protein ratio of the diet widened, indicating that as the energy level of the diet increased, the fat content of the carcass also increased.

Several papers were presented at the last (46) Annual Meeting of the Poultry Science Assn. on dietary effects on carcass composition.

One of interest was with turkeys. Mountney, Atkinson, Mellor and Quisenberry of Texas A&M College fed eight groups of 25 Beltsville white turkeys, singly and in combination, a basal ration and/or 20 mg. stilbestrol per pound of feed, 0.15% thiouracil, and/or 4.5% fat from 10 to 14 weeks of age. The rate of growth was depressed in those groups fed thiouracil. Meat yields of the cooked edible portions were also lower for these groups. Those groups fed fat alone had better growth rate and meat yield than the thiouracil fed groups, but were not as efficient as the basal group alone or the basal group plus stilbestrol. Although some treatments were better than others in certain characteristics, a basal ration supplemented with diethylstilbestrol gave the best over-all results.

Spring and Wilkinson of Louisiana State University conducted experiments with broiler diets containing 22, 25 and 28% protein and 1200, 1350, and 1500 calories of metabolizable energy per pound. At eight weeks of age, increased dietary energy caused increased weight gains (1119 to 1171 grams), decreased body protein (22.1 to 21.1%) and water (69.6 to 67.8%), had no effect on body fat at 25 and 28% dietary protein, but increased body fat (6.8 to 7.3%) at 22%. Increasing dietary protein level had no effect on gain (1145 grams), decreased body fat (7.0 to 6.8%) and increased body protein (21.3 to 21.8%) and water (68.0 to 69.6%).

Rand, Kummerow, and Scott of the University of Illinois, in studies with chicks grown on diets varying in protein, fat and energy content, found that the amount of fat in the carcass was inversely correlated with the protein-energy ratio and with the ratio of protein intake to the relative growth rate. The fat content of the carcass was unaffected by either the energy level or by the fat level of the diet itself. Total energy intake was directly related to the percentage of carcass fat only when protein consumption was constant. The composition of the chick carcass fat was primarily affected by the type and level of dietary fat. The chemical composition of carcass fat approached that of the dietary fat as the intake of the latter increased. The percentage of body fat originating from dietary fat increased in proportion to the level of fat in the diet. High levels of dietary protein tended to decrease the portion of carcass fat derived from dietary fat.

Bird and his group at the University of Wisconsin made a taste panel comparison of broilers fed diets with and without added fat. No significant differences were found between the birds fed a diet containing 26% stabilized choice white grease and those that received none.

Wesley and Stadleman of Purdue found that the use of diethylstilbestrol in paste at 8 and 14 weeks of age increased the tenderness of broilers.

An interesting experiment was reported by Neuman and Schaible of Michigan State University. They fed nine-week-old White Rock broilers diets containing dehydrated garlic, celery seed, allspice, sage, clove or monosodium glutamate for four days to determine if the feeding of these spices could flavor the carcass of broilers.

Only garlic was detected in the

cooked carcasses; no identification of other flavors could be made by the panel. Scores ranked high in acceptability for all birds except those fed garlic.

COMMENTS:

It has been well established that the use of hormone-like compounds will alter the carcass composition of broilers. Dienestrol diacetate and diethylstilbestrol are the two commonly used; diethylstilbestrol as the implant, and dienestrol diacetate as the feed additive. Their purpose is to increase fat deposition and to improve market grade. As shown in the studies just reviewed, while these compounds may have a beneficial effect on carcass composition, their effect on feed conversion has not been as favorable.

It is also evident that fatter carcasses can be obtained by the use of higher levels of fat in the diet along with wider protein-energy ratios. It is also a well known fact that if the protein-energy ratio becomes too wide, the diet will be less efficient. It is therefore apparent that fattening rations are not going to be the most efficient. What advantage may be gained in improved market grade may be offset by poorer feed conversions.

Thiouracil, which showed some promise in the studies covered, does stimulate fat deposition and improve market grade and does not have too adverse an effect on feed conversion. It does, however, have one drawback, and that is that some of it may be retained in the tissues. Meat contaminated with thiouracil would be a health hazard.

As to the effect of carcass fat on the flavor of the cooked meat, the results of the Wisconsin work would indicate that there is little if any benefit flavor-wise from increased fat in the carcass.

It is still a question as to what the consumer really wishes. The present trend is away from high fat meats and this may also hold true for broilers. It would also be interesting to learn how many would like their chicken already flavored with garlic or allspice.

Drug for Cattle Grub Control Given Test

FORT COLLINS, COLO.—Highly promising results with a new systemic insecticide for cattle grub control are being obtained in the first large-scale area tests of the chemical in southeastern Colorado.

Gordon T. Mickle, extension entomologist at Colorado State University, said 100 sections of land in Lincoln and Crowley counties were selected for the test. Cattle in the area, about 2,000 in all, were treated in late November and early December. About 1,000 cattle were given the insecticide in the form of a pill, using Dow Chemical Co.'s ET-57. The remaining 1,000 were treated with Chemagro Corp.'s "Co-Ral" spray.

Both the spray and the pills are systemic insecticides that move through the animal's body to combat cattle grubs.

Mr. Mickle said preliminary checks have been made to test the effectiveness of the chemical. Scientists examined a herd of 19 cows, 13 of which had been treated with the insecticide. Only two of the 13 treated cows showed any signs of grub infestation. One had one grub and the other had two grubs, one of which was already dead. Each of the untreated cows had from five to 25 grubs.

Mr. Mickle said the treatment was timed in the late fall before the grubs had a chance to reach the animals' backs and cut costly holes in their hides.

The treated cattle will be watched and examined frequently for signs of infestation, according to Mr. Mickle.

The southeastern Colorado demonstration was sponsored by the Crowley-Kiowa-Lincoln Stockgrowers Assn., Dow Chemical Co., Chemagro Corp., Livestock Conservation, Inc., and the Colorado Agricultural Extension Service.

Another demonstration with the new systemic insecticide is under way on feedlot cattle belonging to the Alkire Brothers, Wiggins, Colo. The cattle were given a pill in November. When the cattle are marketed, they will be followed through the slaughtering process for grub counts.

Annual Meeting Set

BOSTON—The annual meeting of the New England branch of the Poultry & Egg National Board will be held at 10:30 a.m. April 16 at the Framingham (Mass.) Country Club. Lloyd Geil, Chicago, general manager of PENB, will discuss "Promotion Horizons—Unlimited" following the business meeting and elections. A "dutch treat" luncheon will be held. The meeting is open to all persons with poultry industry interests.

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This is a partial view of the Schoeneck Farms plant at Macungie. Alfalfa pellets are moved to the loading station tanks by means of a positive pressure air system.

New Facilities Speed Material Handling for Pennsylvania Firm

New pelleting and storage facilities, plus new handling methods, have helped bring a more uniform product and more efficient operations for a Fennsylvania firm.

The company is Schoeneck Farms, Nazareth, Pa., with plants also at Macungie and Coplay. The firm produces dehydrated alfalfa.

One hundred per cent pelleting of the alfalfa and inert gas storage have enabled the company to blend a uniform product before packing and shipping, company officials said.

The new facilities include Sprout-Waldron pelleting, cooling and grinding equipment. In addition, the firm installed new pneumatic handling facilities provided by Sprout-Waldron.

At the Macungie plant, as pellets come off the pellet grading shoe, they discharge into a positive pressure air handling system which pushes the finished product into one of four Butler tanks, each having an inclined screw unloading mechanism. From here the material can be moved by truck to the customer, to new facilities at Coplay or to high-grade storage at Nazareth.

The Coplay plant is a concrete structure, including 16 silos, each holding 120 tons. This low grade concentrated storage replaces barns formerly used on farms. The company's trucks have side pockets which permit gravity feed into a blow-through feeder. Manual switching permits control of flow to any of the storage tanks. Discharge from the tanks is by gravity to a screw conveyor and by means of a portable cross conveyor to trucks for shipment.

The pelleting system at Nazareth is combined with a Pneu-Vac system which conveys the pellets by negative pressure to the cooler. This followed by a positive pressure system which sends the material to one of four flat-bottom bins holding 500 tons each or into six Butler inert gas storage tanks. The plant is also set up to load a bulk truck off the pellet grading shoe, utilizing the existing air system. This is done when shipment is direct to a customer or when the pellets are to be sent to the low grade storage facility at Coplay.

At this plant, a Pneu-Vac system has been connected to a hammermill used for regrinding pellets to meal. Storage tanks discharge into screw conveyors which meet in a common outlet in the main building. From here the pellets are handled by Payloader to a blending hopper; then they are discharged into the hammermill and moved pneumatically to an automatic St. Regis packer which has a capacity of 10 tons per hour. Previously the 200 ft. between hammermill and packer was traversed by means of the hammermill fan at a rate of 3 tons per hour.

A section of the Schoeneck plant at Nazareth, Pa. The Pneu-Vac unloading station and Butler storage tanks are on the left.

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By informing your customers of GRAN-I-GRIT'S New Grit Feeding Program you can show them how to make more money from your feed, which in turn will stimulate your sales.

Mr. Gurney C. Hodges, top broiler producer of Low Gap, North Carolina, states:

Records like this offer DEFINITE PROOF!

"I doubted the value of grit for broilers until I was persuaded recently to make a comparative test. The amazing results which I obtained are listed in adjoining column.

"I followed the grit manufacturer's recommendation and fed chick size grit for one week, growing size grit for the next two weeks, broiler size grit for the next three weeks and hen size grit until sold. The birds consumed 180 lbs. of chick and growing size grit and 450 lbs. of broiler and hen size grit.

"I was well pleased that feeding GRAN-I-GRIT made me $125.85 extra and believe that feeding the larger grit sizes was responsible for this outstanding result. I have used GRAN-I-GRIT on other broiler flocks with equally good results."

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	White Rocks Without Grit	White Rocks with GRAN-I-GRIT
No. Birds Started 2/2/56	4,000	4,000
No. Birds Sold 4/10/56	3,854	3,824
Percentage Livability	96.35%	95.6%
Age When Sold	9 wks., 5 days	9 wks., 5 days
Average Weight per Bird	3.27 lbs.	3.479 lbs.
Total Lbs. of Broilers Sold	12,620 lbs.	13,304 lbs.
Bags Broiler Chow Fed	333	332
Lbs. of Meat per 100 Lbs. Feed	37.89	40.07
Lbs. of Feed per Lb. of Meat	2.638	2.49
Broiler Selling Price per Lb.	19c	19c
Receipts from Sale of Broilers	$2,397.80	$2,527.76
Total Cost Chicks, Feed, Sanitation	2,359.07	2,353.73
Labor Profit and Grit Cost	38.73	174.03
Cost of GRAN-I-GRIT 0 lbs. @ 1½c	0	630 lbs. @ 1½c 9.45
Labor Profit	38.73	164.58
Extra Profit from use of GRAN-I-GRIT	0	125.85

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We have a New GRAN-I-GRIT circular that gives full details on the New GRAN-I-GRIT Program of Feeding Larger Sizes of GRAN-I-GRIT . . . the program that is proving so successful with both egg producers and broiler growers. Write today for a Free Copy.

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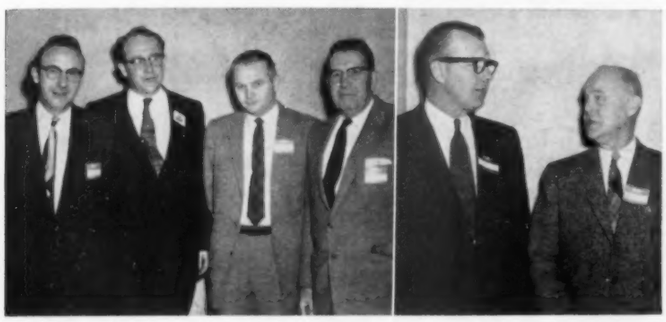
Camera Views of the News

ILLINOIS CONFERENCE SCENES—Shown here are some of the men who took part in the annual Illinois Feed & Nutrition Conference held at Urbana. In the first picture (left to right) are: Dr. K. E. Gardner, R. J. Webb, Dr. A. H. Jensen and F. C. Hinds, all of the University of Illinois. In the second picture is K. E. Harshbarger of the University of Illinois dairy science department, and in the third are M. B. Gillis, International Minerals & Chemical Corp., and Dr. W. M. Beeson, Purdue University, Lafayette, Ind.



PARTICIPATE IN ILLINOIS CONFERENCE—Several men important in animal nutrition and feed industry affairs participated in the annual Illinois Feed & Nutrition Conference held at Urbana recently. They included the men pictured here. In the first picture (left to right) are Dr. Joseph Kastelic, Dr. J. H. Byers, Dr. D. E. Becker and Dr. H. M. Scott, all of the University of Illinois. In the second picture are Alvin Lovekamp, U. & L. Grain Co., New Berlin, Ill., president of the Illinois Feed Assn., and Dr. T. S. Hamilton, Illinois Agricultural Experiment Station.

NAMED TO GOOD EGG CLUB—William B. Hartsfield, mayor of Atlanta, Ga. (fourth from left), is shown as he was honored with membership in the National Good Egg Club during the recent Southeastern Poultry & Egg Assn. convention banquet in Atlanta. Presenting him with a framed membership certificate is Dr. J. C. Huttar, Ithaca, N.Y., chairman of the Poultry & Egg National Board egg advisory committee. The certificate is signed by Herbert Beyers, PENB president. Seated, watching the presentation, are (left to right): H. C. Tilford, Jr., Shelbyville, Tenn., newly elected vice president of the Southeastern group; Mrs. Paul G. Thomas, Sumter, S.C., wife of the new president of the association, and Paul G. Thomas. An estimated 1,200 persons attended the banquet.

Dr. J. L. Krider | Oscar Straube | Dr. Rollin Thayer | Dr. Wise Burroughs

NEW FEED HORIZONS MIDWEST TOPIC—New developments in feeds and feeding, pointing toward new horizons in the business, will make up an afternoon panel discussion at the annual convention of the Midwest Feed Manufacturers Assn. in Kansas City, Feb. 26-27. Dr. J. L. Krider, McMillen Feed Mills, Ft. Wayne, will moderate the discussion, and Dr. Rollin Thayer, Oklahoma State University poultry scientist, as well as Dr. Wise Burroughs, Iowa State College nutrition researcher, are among the speakers. Oscar Straube, chairman of the board of the American Feed Manufacturers Assn. and president of Pay Way Feed Mills, Kansas City, will discuss present and future feed financing.

SITE OF 1958 PRODUCTION SCHOOL—The American Royal Building in Kansas City will be the location for the annual production school sponsored by the Midwest Feed Manufacturers Assn. The school will be held in November. The building contains 10 acres of floor space, and has facilities nearby for parking 3,000 cars, house trailers and trucks. A shuttle transportation system will be arranged between the downtown hotels and the Royal building for the production school.

PRIZE BEEF HEIFERS—Heston McBride, Jr., nine-year-old Blanket, Texas, boy, is surrounded by prize Herefords in this photo taken at the Southwestern Exposition & Fat Stock Show held recently at Ft. Worth, Texas. The heifer at left won the junior breeding title in the Hereford division of the show. The heifer on the right, held by I. O. Sturkie, American Cyanamid Co., is the registered Hereford presented to the boy as a special prize. The award was part of a program through which American Cyanamid presented 22 purebred heifers, gilts and ewes to 4-H and FFA members exhibiting champions. By coincidence, the prize heifer purchased by the company in advance of the show came from the ranch of Heston McBride, Sr., the boy's father.

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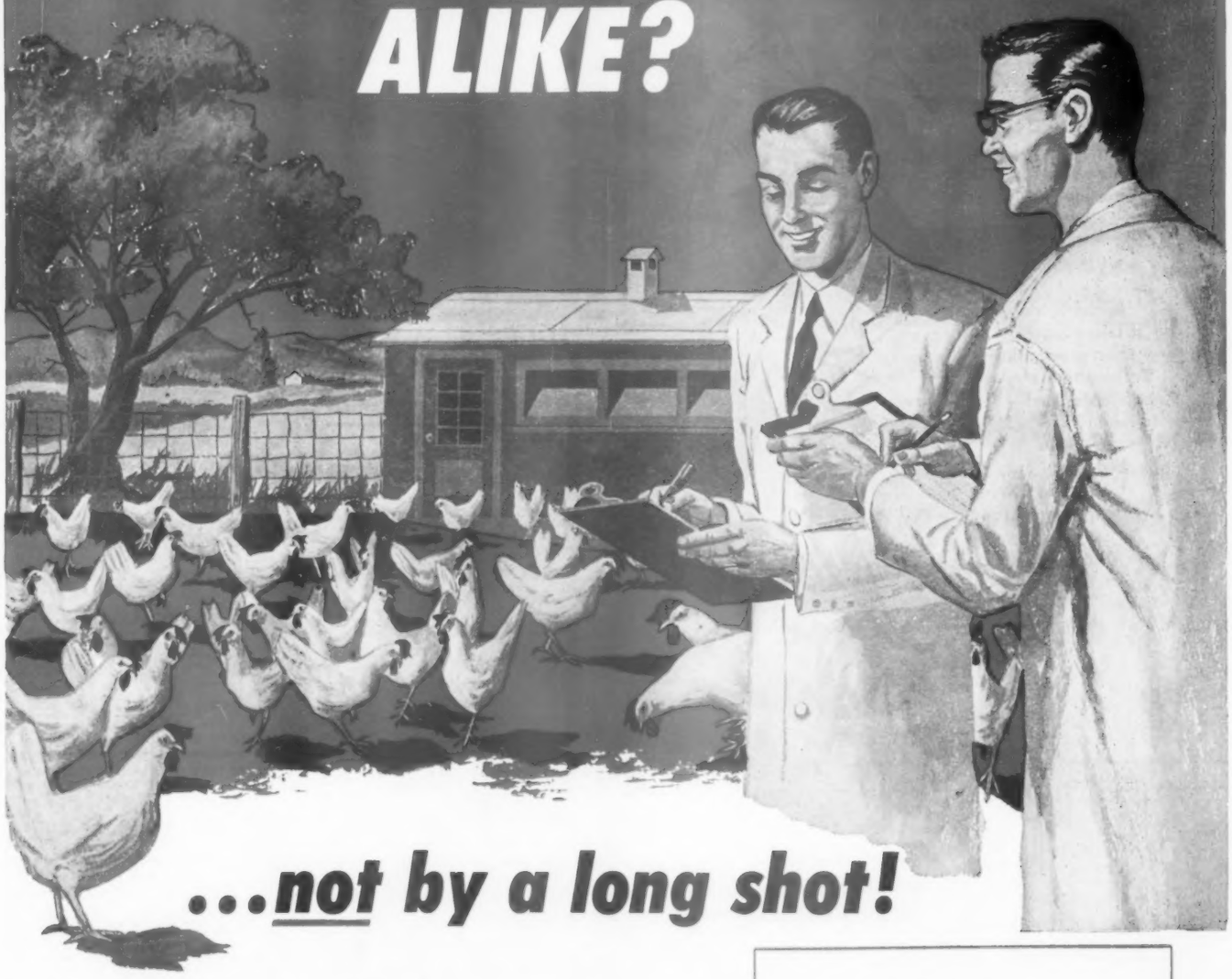

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1. "The Availability of Phosphorus from Different Sources for Poults Fed Purified Diets." *Poultry Science,* Volume XXXIII, Number 5, September, 1954.
2. "A Comparison of the Availability, to the Young Growing Chicken, of the Phosphorus in Defluorinated Phosphate and Analytical Reagent Grade Dicalcium Phosphate," by Lime Crest Research Laboratory, October, 1954.
3. "The Availability of Phosphorus from Different Sources for Poults Fed Practical-type Diets," *Poultry Science,* Volume XXXIV, Number 5, September, 1955.
4. "Phosphorus Availabilities as Determined by New Feeding Experiment," by Lime Crest Research Laboratory, November, 1955.
5. "Phosphorus Availability Assays by the University of Illinois (as presented by Dr. H. M. Scott) Method," by the Laboratory of Vitamin Technology, Inc., September, 1956.

Read what a leading nutritionist says about phosphorus availabilities:

"The feed nutritionist should be aware that the phosphorus in all phosphorus supplements is not available. The phosphorus supplier should be required to provide data concerning the availability of phosphorus in the supplement. Phosphorus supplements available to the feed trade may range from as low as 23% to as high as 92%. Thus the importance of phosphorus availability is immediately apparent."

Dr. J. R. Couch, *Formulation of Feeds for Laying Hens,* Feedstuffs, *July 27, 1957, pp. 18-24*

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EXPLAINING THE PROGRAM—C. C. Jolly (left) explains the feed plan for 4-H Club members to the father of a club boy.

Boosts Boys' Determination

Feed Man Rewards 4-H Clubbers For Completing Their Projects

By Ruel McDaniel

In Waxahachie, Texas, C. C. Jolly, who owns Waxahachie Feeders Supply, is doing a job of working with 4-H Club boys that has earned the praise of county agents and vocational agriculture teachers. It also has created praise and goodwill from fathers and mothers of 4-H Clubbers.

Although some dealers offer discounts on feeds bought by club boys for use in feeding out their potential show entries, Mr. Jolly looks upon that policy with disfavor, because it holds out no special incentive for the club boys to complete their feeding projects.

Instead of offering the boys special discounts, he outlines to them his rebate program, whereby any boy who completes his feeding project and enters his animal in the local show earns a rebate on all feeds purchased for feeding his show animals.

The boys have taken to it like they do to the swimming pool in summer, and the parents and the men who organize and promote the feeding projects particularly appreciate it.

How It Works

The program is simple, and works like this:

And 4-H or vocational agriculture boy who signs up to feed out any animal as a part of the county program is invited to come to the Jolly store and sign up for the feeds he needs to carry out his project. He is told at the time that if he continues to feed his animal and enters it in the local show—or any area show, for that matter—he is entitled to a refund of 40¢ per 100 lb. of feed he will have bought from the store, whether or not his entry places in the awards.

If his entry lands first place in its class, the boy is entitled to a rebate of 80¢ per 100 lb. on feed bought; and if the animal should win the grand championship, the boy owner has coming to him a rebate of $1.20 per 100 lb. of feed purchased from the Jolly store.

If the club boys have their own grain and want to feed it, Mr. Jolly encourages them to do so, recommending at the same time the proper supplements to make the grain produce the greatest growth.

Whether a boy raises a calf, hog, sheep or poultry, he may enter into the agreement with Mr. Jolly and win his feed rebate when he enters his animal in any show.

"It has been our observation that to give a club boy a discount as he buys feed for his projects, he has no special incentive to continue feeding his animal if it should get off to a bad start or he sees that a neighbor has a better calf or hog and he has little chance of winning any honors at the fair," Mr. Jolly said. "He is inclined to drop out, and having already received his discount from his feeds, he may drop out without losing anything.

"On the other hand, when he buys from us under promise of a rebate if he enters his animal, he will continue to feed and care for his project, even though it may look as though he hasn't a chance of winning a prize. The moment he enters his animal in a show, he has won a prize, in a manner of speaking, for he has earned a rebate on his feeding costs."

The fact that the Jolly store has had the boys who produced the grand champion calves in the last two successive shows has been a pride of Mr.

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Dr. James D. Russell

VETERINARY RESEARCH — Dr. James D. Russell has joined the staff of American Scientific Laboratories, Inc., Madison, Wis. He will divide his time between research investigations and technical services in the field for ASL, assuming the responsibilities formerly assigned to Dr. W. Gregory Clark who has left the ASL organization. Dr. Russell received his B.S. degree in agricultural bacteriology from the University of Wisconsin in 1950. After a year of graduate work at the University of Maine in bacteriology and biochemistry he earned a D.V.M. degree at the University of Minnesota in 1955. For the past 2½ years, Dr. Russell has had a general practice in California. He is a member of the California Veterinary Medical Assn., the American Veterinary Medical Assn. and Phi Zeta professional fraternity.

Jolly's and a genuine boost to the store and the feeding program.

Mr. Jolly promotes the plan by talking to county agents and vocational agriculture teachers, and to parents who come to the store. The plan is well known throughout the area by now, and the boys who are buying through the program are the biggest boosters, Mr. Jolly finds. They help to sell other club members.

He devotes considerable effort to sell fathers and mothers of club boys on the plan, because they easily see the logic in it, Mr. Jolly says.

Feed Dealer Numbers Show Steady Decline In California Study

SACRAMENTO, CAL. — Although California produces nearly 11% of the national feed tonnage, a recent survey by the California Hay, Grain & Feed Dealers Assn. shows that the number of dealers handling commercial feedstuffs has been on a steady decline over the past three years.

Taking licensed firms as the basis for their findings, the association points out that in 1955 there were 3,025 dealers in the state as compared with 2,915 for the year 1956, and 2,822 for last year. Licensees were counted as of Dec. 30 of each year.

In explaining this decline, the association observes that the number of "sideline" operators—those who retail feed as an incidental or customer convenience item—has fallen off considerably. In arriving at this conclusion, association researchers did a class-by-class breakdown of licensees and discovered that in mid-1956 there were 189 broker-jobbers, 983 manufacturers, 75 feed yard operators, and 1,787 dealers.

The following year, while there were substantially the same number of firms in the first three classifications or 198 broker-jobbers, 981 manufacturers, 75 feed yard operators, there were over 1,000 fewer dealers holding licenses in the state.

Brucellosis Eliminated In 13 N.J. Counties

TRENTON, N.J. — Thirteen New Jersey counties are now rated as officially brucellosis-free areas, reports Dr. R. E. Kerlin, chief of the Bureau of Livestock Disease Control, New Jersey Department of Agriculture.

Cumberland County is the most recent addition to the list.

Other counties now certified are Atlantic, Bergen, Camden, Cape May, Essex, Gloucester, Mercer, Middlesex, Passaic, Ocean, Union and Warren.

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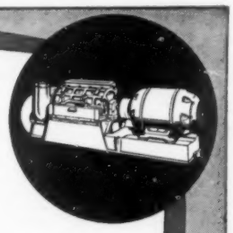

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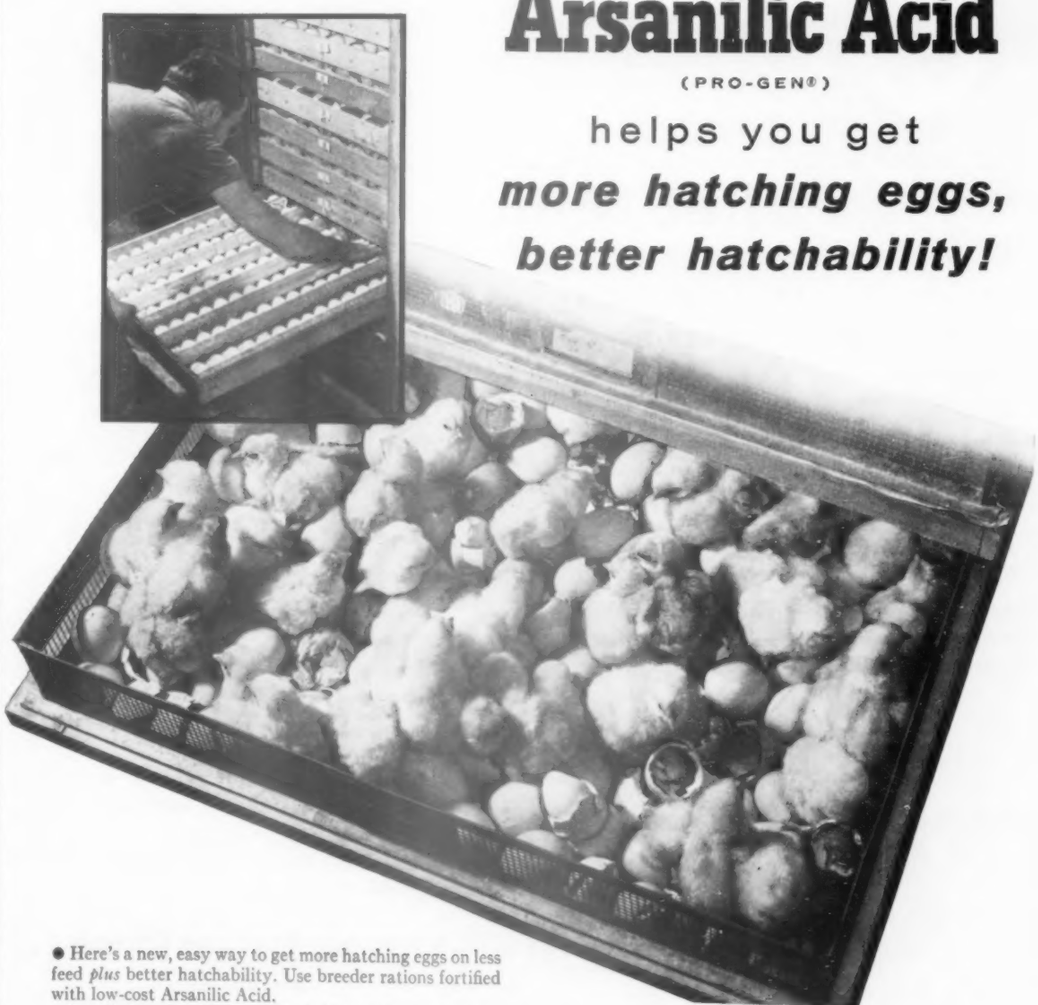

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3. Better Hatchability—Improved hatchability of all eggs set was achieved in South Dakota tests. With the exception of only one test where only a few eggs were set, the improvement in hatchability of all eggs set were from 4 to 5%. (That's 40 to 50 extra chicks per 1,000 eggs!)

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Feeding Value of Thyroactive Supplements To Dairy Cows in Successive Lactations

By E. W. Swanson and W. M. Miller
University of Tennessee

EDITOR'S NOTE: The accompanying article is reproduced from a recent issue of Tennessee Farm and Home Science, published by the Agricultural Experiment Station of the University of Tennessee. Dr. Swanson is a professor and Mr. Miller an instructor in the dairy department.

The July, 1953, issue of Tennessee Farm and Home Science reported that an average of 7 to 8 lb. of extra milk per cow per day was possible for 100 days. This extra milk resulted from feeding thyroactive supplements to high-producing, well-fed cows. In general, this report agreed with reports of similar research in this country and abroad. Effects of feeding thyroactive materials in a single lactation are fairly well known; effects on later lactations are not.

To learn the effects of long-term thyroactive feeding on the milk production, growth, health and well-being of dairy cows, an experiment with identical twin cows was started in 1952 at the University of Tennessee. By feeding one cow of each pair thyroxine and using her mate as the control cow, the most nearly perfect comparisons between milk cows that nature can provide were utilized.

The experiment began with five pairs of twins, but at the end of the second lactation one pair and one cow of another pair had to be taken off the experiment because of udder injuries. Three pairs have now completed three lactations in this study. A cow from the college herd was paired with the remaining twin of a fourth pair for comparison during the third and later lactations.

TABLE 1. The Average Milk Production Corrected to 4% Fat Basis of Five Pairs of Identical Twins During the Pre-Treatment Period (Before the Thyroactive Material Was Fed) to One Twin of Each Pair) During Their First Three Lactations

Lactation (No.)	Average length of period (week)	Milk production, 4% FCM — Control twins (lb./cow)	Thyroxine-fed twins (lb./cow)	Thyroxine controls %
1	20	3632	3709	102
2	20	4523	4533	100
3*	19	4900	4731	97

*Four pairs.

Amount of Thyroxine

All animals were handled similarly and according to the established management practices carried on in the University of Tennessee herd. The exception: one animal in each pair received thyroactive supplement (equivalent to 100 to 150 mg. of l-thyroxine per day) from about the 20th week of lactation until she was dried off. The same cow in each pair has received the supplementation in each successive lactation while her mate served as her control.

Each cow's milk was weighed and recorded at every milking. Tables 1 and 2 show production data.

Effects on Growth Rate

Since thyroxine feeding of these cows was started in their first lactation, records were kept to see if the growth rate of these cows was affected. Monthly body weights, heart girths, and withers heights — since this is an indication of skeletal development—were recorded. Table 3 shows these average data.

The average weights and measurements in the "start" column in Table 3 are averages of the values obtained just before calving, and those in the "end" column are the weights and measurements when the cows were dried off.

Each year the twin cows received thyroxine they have increased their milk production about as much as their control mates (Table 1). This tends to answer a frequently heard suspicion that a cow's milk production might drop in future years after she is fed thyroactive compounds.

No Bad Effects With Other Cows

Also, in other experiments the milk yield of other thyroxine-fed cows in the University of Tennessee herd was not affected adversely. The average of 44 lactations—after thyroxine had been fed the year before—was 5,622 lb. of milk in the first 150 days. In the lactation before, the average milk yield for these same cows totaled 5,226 lb. the first 150 days. So the cows actually averaged more milk the year after they were fed thyroxine. Age increases of some of the cows were mostly responsible.

Table 2 shows the average production of 4% fat-corrected milk per cow in each group during the period of thyroxine feeding. Note that the production in the second and third lactations during this period was practically the same for both groups of cows. One treated cow developed a uterine infection after her third calving. Therefore she did not reach a level of production comparable to that of her mate. During the pre-treatment period she produced 464 lb. less fat-corrected milk than her mate and during the period of thyroxine feeding she produced 598 lb. less than her control mate. The other three treated twins markedly exceeded their mates' production during the treatment period.

The magnitude of response to treatment in the second and third lactations was also reduced by having to feed the supplement during the hottest part of the summer. Although the summer treatment should have given the treated cows more stress than would winter treatment, the hot weather reduced the possibility of economical milk yield responses.

The weekly percentage of fat and total solids in the milk of these cows was also recorded. The only

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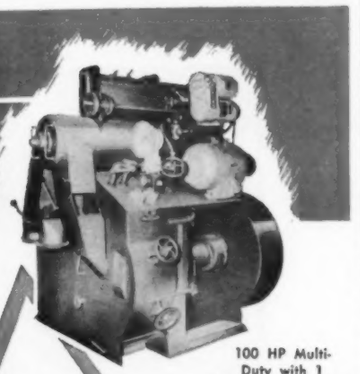
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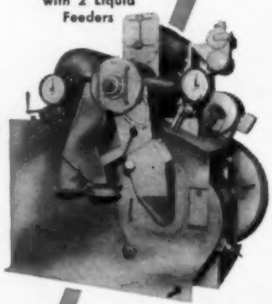
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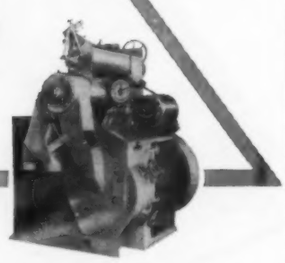
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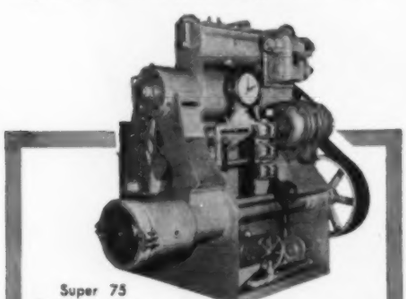
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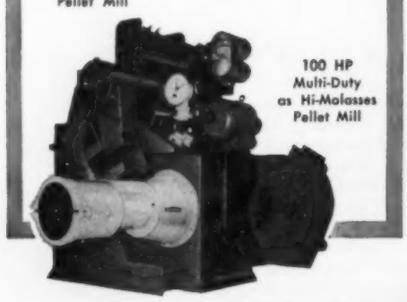
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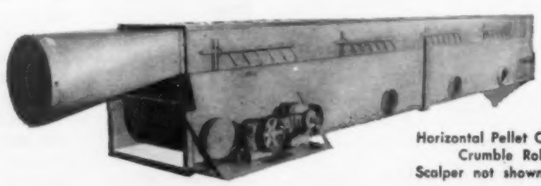
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TABLE 2. The Average Milk Production Corrected to 4% Fat Basis of Five Pairs of Identical Twins During the Treatment Period (When Thyroactive Material Was Fed to One Twin of Each Pair) During Their First Three Lactations

Lactation (No.)	Average length of period (week)	Milk production, 4% FCM — Control twins (lb./cow)	Thyroxine-fed twins (lb./cow)	Thyroxine controls %
1	17	2161	2726	126
2	17	2333	2449	105
3*	19	2867	3067	107

*Four pairs.

TABLE 3. Average Body Weight, Withers Height and Heart Girth of Five Pairs of Identical Twins Comparing Thyroxine vs. Normal Feeding in Three Lactations

Lactation	Controls — Start	Controls — End	Thyroxine-Fed — Start	Thyroxine-Fed — End
	Body weight, lb.			
1	780	823	762	811
2	950	980	907	941
3*	1103	1095	1081	1041
	Withers height, in.			
1	44.8	46.7	45.1	46.8
2	47.8	48.2	47.2	48.2
3*	48.1	48.4	48.6	48.6
	Heart girth, in.			
1	62.1	65.4	62.3	65.0
2	67.4	69.1	66.6	67.4
3*	70.4	70.6	69.6	70.4

*Average of three pair in third lactation.

definite trend that could be attributed to thyroxine feeding was a slight increase in fat test of milk from some cows. However, this was not a consistent effect in all pairs. Therefore, the difference between the weight at the end of the first lactation and the weight at the start of the second lactation shows the amount each cow gained during her dry period.

It is apparent from Table 3 that all cows gained weight during their dry periods at a comparable rate. Thyroxine feeding has not hurt growth rate or skeletal development in these cows. The data for the third lactation are from only three pairs of cows because the control animal in one pair has consistently outweighed her treated mate by about 100 lb. The weight differences in the third lactation appear larger than should be expected.

Fish Visceral Flour Reported Satisfactory As Swine Supplement

OTTAWA, ONT. — Fish visceral flour, a new product of the fishing industry in Canada, in a recent test was found to be a satisfactory protein supplement in the rations of growing and finishing swine.

The test was carried out at the Canada Department of Agriculture Experimental Farm at Nappan, Nova Scotia.

T. Cameron, of the farm's animal husbandry division, says the swine had no objection to the fish flour ration and their rates of gain, feed efficiency and carcass grade were satisfactory.

The hogs used in the test received a ration of barley, oats and minerals, plus fish visceral flour at the rate of 10% by weight of the grain allowance, from weaning until the pigs reached a live weight of 100 lb. At this point the fish flour was reduced to 4% of the grain mixture and kept at this level until the pigs reached the market weight of 200 lb.

Fish flour is prepared by collecting fresh cod and haddock viscera on board ship. Sodium nitrate is added to this material and the viscera are kept at a temperature of 80-100 degrees F. for several days. During this time most of the solids go into solution. The solution is then drum dried and ground into flour.

An estimated 90 million pounds of fish viscera are discarded annually in the Atlantic area. From this amount of viscera, approximately 18 million pounds of fish visceral flour could be produced each year. The fish flour used in the Nappan test was produced on an experimental basis by the Fisheries Technological Station, Halifax, Nov. Sc. Investigations on the use of this new feed are continuing at the Nappan Experimental Farm.

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ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 2, Md.

TRUCK SCALES WANTED—15 TONS AND up—20 ft. deck and up. Preferably from Alabama, Georgia or Florida area. Seminole Milling Co., Inc., Donalsonville, Ga.

WANTED TO BUY—COMPLETE USED barley roll—with steamer at least 15"x30". State condition and price. Arizona Flour Mills Co., P. O. Box 2510, Phoenix, Ariz.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

WANTED — PELLET MILL, COOLER, crumbler, scalper, two-ton horizontal mixer. Boiler or steam generator. Quote make, size, condition, dies, price. With or without motors and switches or starters. Will buy complete unit including legs if available. Capitol Feed & Milling Co., Inc., P. O. Box 6145, Austin, Texas.

EQUIPMENT WANTED

WANTED LABORATORY EQUIPMENT — Six or twelve unit Kjeldahl, Spectrophotometer, Model B (Beckman No. 12000) or Model DU. Six unit fiber extractor. Write or phone Clyde Milling Corp., Clyde, N. Y.

BUSINESS OPPORTUNITIES

FEED MILL, ELEVATOR, WAREHOUSE, hatchery, egg buying station for sale. Branded feeds manufactured, sold, both wholesale, retail. Illinois location. Bargain price to settle estate. Address Ad No. 3550, Minneapolis 1, Minn.

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FOR SALE — SOUTH ALABAMA FEED mill, opportunity for semi-retired man. Doing good business during winter months. Complete mill for custom grinding and mixing. Molasses blender. New building. Equipment in excellent condition. Only mill—county seat. Address Ad No. 3529, Feedstuffs, Minneapolis 1, Minn.

WILL INVEST IN SUCCESSFUL MEDIUM-small feed business and relieve present owner of management worries. Prefer mill manufacturing own brand. Successful management record grain and feed, wholesale-retail, sales, production, financing. Ag college education, proven ability as business getter. Address Ad No. 3532, Feedstuffs, Minneapolis 1, Minn.

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FEED MILLS and ELEVATORS
We Can Help You When You Want to Buy or Sell Your Business
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Halbert C. Smith Plymouth, Ind.

CREDIT and FINANCE ADMINISTRATOR

National processor of formula feeds for farm trade seeking experienced man in credit and finance area. Want individual with sound academic background as well as experience in field of credit and/or finance. Job entails responsibility for developing finance programs, evaluating and minimizing risks, coordinating with sales and assuring profitability of finance and credit effort. Experience in one or more of following areas desirable: banking, law, industrial or agricultural credit, financial house.

Prefer man age 27 to 32 willing to locate in Midwest. Must have proven ability. Send complete resume including salary expectations. Address Ad No. 3534, Feedstuffs, Minneapolis 1, Minn.

Bruce C. Walsh George F. Ford

Dorsey Firm Names Field Representatives

ELBA, ALA.—The appointment of two field representatives for the recently-acquired bulk delivery equipment lines of the Dorsey Trailer Co., Elba, was announced by Horton Fick, vice president in charge of sales. They are Bruce C. Walsh and George F. Ford.

In addition, the company's bulk equipment division has acquired a service specialist, William Duram, who will conduct a training program for Dorsey distributors.

Mr. Duram was formerly in charge of inspection and service for the Highway Equipment Co., Cedar Rapids, Iowa, from whom Dorsey purchased exclusive manufacturing rights for Bulkmaster and Feedmaster bulk bodies and trailers.

Mr. Walsh, whose headquarters will be in St. Louis, has spent 16 years with other manufacturers of construction and transportation equipment, including eight years in the bulk hauling field.

Mr. Ford formerly handled the southern territory for the Highway Equipment Co. He recently moved from Atlanta to Elba and will work directly out of the Dorsey factory sales office. In addition to nearly four years experience with Highway, Mr. Ford was a factory representative for automobile manufacturers for eight years.

Michigan University Schedules School for Elevator Employees

EAST LANSING, MICH.—The annual Elevator Employee School for feed and grain men will be held March 6 at the Kellogg Center, Michigan State University.

The program has been developed for elevator employees only and will be more oriented toward education than in past years.

The morning session, starting at 8:30, will include subjects centering upon salesmanship and methods of better fitting the employee to the needs of modern agriculture.

Scheduled addresses are "How Can I Become Indispensable?" by Richard Coelho of the university; "Don't Bet Your Life," by Monte Kahlbaum, Kahlbaum Bros., Carleton, Mich., and "Reach for a Star," by Elmer Roth, vice president and sales manager, Honegger's & Co., Fairbury, Ill.

Chairman of the morning meeting will be Burton Bader, Bader Milling Co., Mt. Pleasant, Mich.

After a noon chicken barbecue the group will attend various research centers of the dairy, animal husbandry and poultry departments. University nutrition experts will then summarize the tours and answer questions at an afternoon meeting. Dr. J. A. Hoefer will represent the animal husbandry department, Dr. Charles A. Lassiter, the dairy husbandry department and Dr. P. J. Schaible, the poultry department.

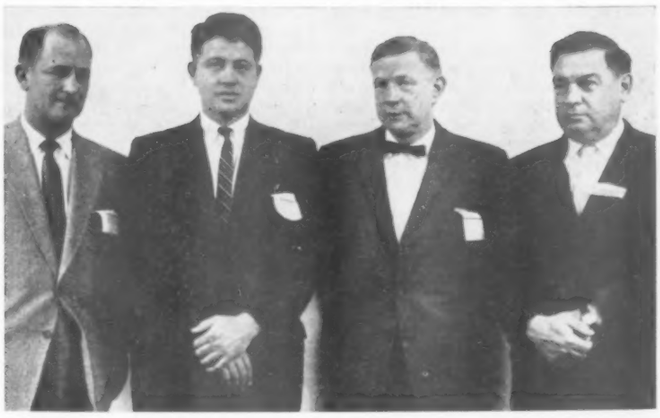
Reservations to attend the meeting can be obtained from the Michigan Feed & Grain Assn., or from George Greenleaf, short course department, Michigan State University.

Cattle Feeders Advised To Move with Caution

BROOKINGS, S.D.—Cattle feeders should feed with caution and watch market supplies if they have fed stock to sell between now and May 1.

This is the advice of Ed Dailey, livestock marketing specialist with the Agricultural Extension Service at South Dakota State College. He said rapid feeding of soft corn this winter is likely to cause bunched marketings of cattle towards spring. He pointed out that feeders usually feed to heavier weights when the feed price-cattle price ratio is as favorable as it has been this winter.

Mr. Dailey said feeders should look for a seasonal price decline and expect discounts for heavy weights whenever the beef supply gets ahead of market requirements.



CLINIC DISCUSSIONS—Shown above are four participants in discussions on the nutritive value of cottonseed meal for poultry feeding and the significant differences between cottonseed and soybean meal for animal nutrition. The discussions were part of the seventh annual Cottonseed Processing Clinic held recently at New Orleans. From left to right are: James Hicky, Forrest City Cotton Oil Mill, Armour & Co., Forrest City, Ark.; W. G. Quinn, Buckeye Cellulose Corp., Memphis, Tenn.; Dr. H. L. Wilcke, assistant director of research, Ralston Purina Co., St. Louis, and Dr. V. L. Frampton, southern utilization research and development division, New Orleans, a division of the U.S. Department of Agriculture.

Panel on Retailing Is Highlight Of Mutual Millers Convention

By GEORGE W. POTTS
Feedstuffs Staff

BUFFALO—Counsel to the retailer on methods and business practices for a modern, successful operation was offered in a panel session viewing "The Independent Retailers Through the Eyes of Their Suppliers," program highlight of the annual winter convention of the Mutual Millers & Feed Dealers Assn., held here recently.

The panel featured Ernest C. Kessler, president of Ames-Burns Co., Jamestown, N.Y.; Samuel M. Golden, president of the Amburgo Co., Inc., Philadelphia; John K. Hoekstra, district sales manager of International Minerals & Chemical Corp., Buffalo, and Charles E. Stansbury, sales representative of Craver-Dickinson Seed Co., Buffalo. Austin W. Carpenter, editor of Eastern Feed Merchant, acted as moderator. He was introduced by Donald E. Mattison, James H. Gray Milling Co., Inc., president of the association.

In a series of short presentations followed by a question period, the panelists told the retailers to stress service, marketing and advertising, keep better records, seek new markets, develop a better public relations program and keep abreast of all developments affecting their business.

Customer is King

One speaker told the retailers to "remember the customer is king, and the service angle is on top of the list." He recommended working with the farmer customer on plans for the entire season and selling a "complete package" including all types of seeds, fertilizer, insecticides and equipment on a seasonal basis.

He visualized good service and good results bringing repeat business, good will and more customers from friends and neighbors.

Other recommendations included use of testimonials, prizes on cash purchases and keeping the dealer's name and his brands constantly before the customer.

The potential business in forage fertilizer was described as "terrific" and the home and lawn fertilizer field important and a good prospect for the "package deal."

Touching on public relations, one speaker described it as "the most sorely neglected aspect of modern business." He stressed the importance of properly greeting customers and indicating personal interest both at the store and farm levels.

Citing statistics, he noted that 69% of customers failing to return to a store did so because of indifference, and 14% because of failure to solve a grievance or to equitably meet the problem on a common ground.

Need to be Informed

This speaker told the retailers to keep up with all developments, noting that "a tremendous amount of knowledge is needed in many fields." He further called for better management, merchandising, generation of new ideas and more advertising. In conclusion, he offered this formula for a successful operation: "Buy right, budget right, price right and sell right and it will mean a profit."

The panelists saw great opportunity for the retailer and urged him to "be the kind of a guy the farmer will want to bring his problems to," because "the farmers still prefer to deal with the dealer alone, and dealers should capitalize on this fact."

The prediction that "never again will we have a great depression comparable to 1929-1932," was voiced by Dr. Joseph Shister, chairman of the University of Buffalo's department of industrial relations, the convention's luncheon speaker.

This well-known labor arbitrator contended that this was not logically possible although "recessions" might occur. He said that in the event of a recession the government would step in immediately through public works, a monetary policy, reduced taxes or defense spending because "no administration would deliberately commit political suicide."

He stated that prosperity on the long-range basis was not possible without inflation but indicated that "inflation is better than mass unemployment." He visualized rising prices with the labor movement a strong factor and predicted prices would rise 1 to 2% a year for the next 20-25 years.

"Group Economy"

The speaker saw a trend to more highly-skilled labor through automation, and saw the government role in our economy expanding. In this connection, he pointed to the American economy becoming a "group economy," dictated by large, organized groups such as labor, industry, government and agriculture.

In this developing "group economy" he saw the problem of how to "protect the individual freedom within the large group," whether it be the freedom of the individual person or small individual units or businesses. "This is the real challenge of the next 20 years," he concluded.

The convention featured a business session, the showing of "Old MacDonald," a color sound movie sponsored by the American Feed Manufacturers Assn., and a social hour concluding the convention, through the courtesy of the 40 supplier members of the association.

SNOW NO HANDICAP TO MUTUAL MILLERS

BUFFALO — Despite one of the worst series of winter storms on record, blanketing Buffalo and the surrounding area in snow deposits ranging from 18 to 38 in., registration at the winter convention of the Mutual Millers & Feed Dealers Assn. was casually described by its secretary, Margaret Bentley, Jamestown, N.Y., as "normal." The significance of this turnout is illustrated by the fact that Buffalo's radio station WBEN devoted 22 minutes airtime the previous evening to cancellation notices for local meetings because of travel conditions. The majority of the association members drive to this meeting, and the attendance is a tribute to the members' support of the association.

WHY NOT YOU, TOO?
Many feed manufacturers are turning to ground corn cobs in their feed programs. Paxco Dehydrated Corn Cob Meal, in grinds tailored to your needs, offer unexcelled uniformity and economy. Write today to
PAXTON PROCESSING CO., INC.
P. O. Box 120 Phone 222 Paxton, Ill.

Management School for Poultry Men Planned

ATLANTA, GA.—The most recent developments in management skills and responsibilities will be offered by the Executive Management School sponsored by the Southeastern Poultry & Egg Assn. It will be conducted at the University of Georgia.

The school will again be broken into three one-week seminars, March 16-21, July 27-Aug. 1 and Nov. 2-7.

The curriculum for the first week will center around business policy and administrative practices. These subjects will deal with company problems such as developing an administrative organization, determining who makes policy, recognizing and analyzing a problem, dealing with human relations in top management and delegating authority.

Other subjects will be presented in creative thinking, executive salesmanship, business forecasting, finance and credit and wage-hour regulations.

Harold E. Ford, executive secretary of the association, said, "This program has received a tremendous amount of enthusiasm and we feel that it is filling a gap in management needs that cannot be obtained any other way."

Applications to attend this school, or to receive additional information, should be sent to Mr. Ford, Southeastern Poultry & Egg Assn., 235 E. Ponce de Leon Ave., Decatur, Ga.

American Cyanamid Promotes Veterinarian

NEW YORK—Dr. Frank L. Howland, D.V.M., has been promoted to the post of regional technical service director, farm and home division, American Cyanamid Co., Dr. M. Scalera, technical director, announces.

Dr. Howland will be responsible to the eastern sales region for consultation and assistance on technical problems and will serve as liaison between the company and various universities and government agencies.

He joined the company in October, 1956, and the following year was appointed animal health technical coordinator. Dr. Howland received his D.V.M. degree at Iowa State College in 1951.

Editor to Address Georgia Short Course

ATHENS, GA.—Alex Gordeuk, editor of Turkey World, will be the featured speaker at the annual turkey short course Feb. 26 at the poultry building, University of Georgia. This was announced by J. Henry Massey, extension poultryman and secretary of the Georgia Turkey Assn.

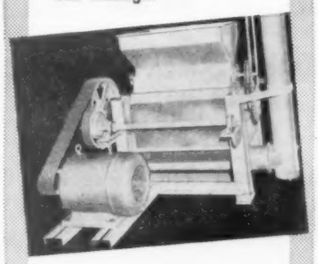
According to J. Clyde Drigger, chairman of the department of poultry husbandry at the university, the Commercial Egg School will be March 26, and the annual Broiler School and chicken-of-tomorrow contest will be April 2.

Parts Company Formed

FRESNO, CAL.—The formation of a new company dealing in used feed mill equipment was announced by William C. Conley and O. E. Crabil, both of Fresno. The firm will be called, Conley's Used Parts.

FORMULA FOR PROFITS

Almost **FANTASTIC PROFITS** are being made in grain rolling and mixing...



Example: $30.00 per hour with this Giant Krimper-Kracker®... and as much as $10.00 per hour with our little 10x10" mill. 15 sizes.

PRECISION MIXING FOR DRY AND LIQUID MOLASSES FEED MIXING

- 100 pound to 8000 pound sizes
- Portable or Stationary Mixers

TODAY you want to figure how much it costs you *not* to have this equipment rather than the price, which happily is most reasonable.

This sweeping change-over to dust-free rolled grains gives you a once-in-a-lifetime fortune making opportunity. Ask about our corn and cob Granulator too!

Come in and see our wonderful new factory; no finer production equipment anywhere.

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Committee Urges More Research In Feeds, Forages

WASHINGTON — Expanded research on improvement of forage plants, soil and water management, forage harvesting, and the problem of ruminant bloat were urged by the U.S. Department of Agriculture's feed and forage research and marketing advisory committee at its annual meeting in Washington recently.

Each of these areas of study constitutes a high priority need in feed and forage research, in the committee's opinion.

Forage plant improvement studies, according to the committee, would include the breeding of superior forage grasses and legumes of high nutritive value and resistance to insects and diseases.

The soil and water studies require a team approach to learn the most efficient use of irrigation water for feed and forage crops and to prevent soil losses through more efficient soil management systems, the committee said.

Research on bloat should be expanded to determine experimentally those factors that contribute to this condition, so that they may be correlated with the occurrence of bloat in animals being handled under usual farm practices.

Research on harvesting procedures, in the committee's opinion, should be aimed at using modern equipment efficiently to produce good quality silage. More studies are needed on the bacteriological and chemical changes that take place during silage fermentation.

In the area of utilization research, the greatest need is for studies of new-crop composition, processing, and evaluation, the committee indicated. This is basic to finding new plant sources of feedstuffs and industrial materials.

Marketing research problems meriting high priority attention, according to the committee, are (1) control of insects that infest stored grains and feeds, and (2) effects of time, temperature, moisture, and humidity on microbiological and physiological deterioration of grain in storage and on loss of germination.

Established under the Research & Marketing Act of 1946, the committee is composed of national authorities on feeds and forage. Its detailed recommendations for research to be undertaken by USDA will be submitted formally to the department within the next few weeks. Copies of this report will be available from the committee's executive secretary, Marshall J. Goss, Office of the Administrator, Agricultural Research Service, USDA, Washington 25, D.C.

E. G. Cherbonnier, feed consultant, St. Louis, Mo., presided as committee chairman. Other committee members who attended were: Dr. H. R. Albrecht, director, division of extension, Pennsylvania State University, University Park, Pa.; H. M. Blackhurst, manager, Utah Poultry & Farmers Cooperative, Salt Lake City, Utah; Harrison Evans, manager, E. F. Nunn & Co., Shuqualak, Miss.; Dr. T. S. Hamilton, associate director, Illinois Agricultural Experiment Station, Urbana, Ill.; Harold L. Peet, Pike, N.Y.; Russell Pierson, Nichols Seed Co., Oklahoma City; Wayne Rogler, Matfield Green, Kansas; K. J. Shaw, manager, John F. NcNair, Inc., Laurinburg, N.C., and J. W. Stiles, director of research, Cooperative G.L.F. Exchange, Inc., Ithaca, N.Y.

Tests Show Greater Labor, Equipment Cost With Caged Layers

URBANA, ILL.—Labor and equipment costs appear to be greater with laying flocks kept in cages rather than in similarly mechanized litter houses.

At the University of Illinois college of agriculture, studies of five caged laying flocks indicate that caged flocks require about 25 hours more labor a year for 100 birds than flocks kept in litter houses with the same level of mechanization.

With a flock of 1,000 it was determined that time required for feeding each 100 caged hens ranged from 18-30 hours annually. Taking care of water troughs between the rows of cages took 2.5 hours a year for 100 hens, or five times the average for the same chore in litter houses.

Gathering eggs from caged layers took only half the time required with conventional nests, but keeping individual production records and cleaning the cages raised the total time to 26 hours for 100 hens, or 10 hours more annually than in conventional systems.

The Illinois study also indicated that single-deck cages on the farms studies took about 3.5 sq. ft. of floor space per hen, counting space in the alleys and at the ends of the house. Double-deck cages cut the required space to about 2 sq. ft. per hen, but litter pans placed between the upper and lower cages had to be cleaned weekly. The cleaning job required 20-30 hours for 100 hens each year, compared with 6-7 hours required in litter houses or single-deck cage systems where droppings are usually removed only once a year.

Cage equipment for 100 hens can be bought for $110-$150, the university reported. This can be compared with the cost of hand-filled feeders, automatic waterers, nests and dropping pits in litter houses, which runs to about $90-$100 for 100 hens. Egg processing and storage facilities are not affected by the system of handling the hens.

The university report mentioned that there are other factors to consider besides the labor and equipment requirements of a cage system. Among these are methods and benefits of close culling, salvage value of hens, nutrition and housing requirements, raising of replacements and fly control.

University officials point out that a more thorough study of the problem under Midwest conditions will be needed to determine whether the advantages of cages may outweigh the disadvantages.

Speed chick growth, lower feed costs with

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CORN FERMENTATION CONDENSED SOLUBLES

MAZOFERM Corn Fermentation Condensed Solubles, extracted from corn in the steeping process, contains water soluble unidentified chick growth factors, which are amplified by the fermentation process in Mazoferm production.

MAZOFERM significantly increases the growth rate of chicks on rations containing adequate levels of fish and whey factor ingredients. (Experimental rations have included the ANRC, NECC Rations, and several commercial rations.)

MAZOFERM is an exceptionally rich source of whey factor activity. Mazoferm permits complete replacement of fish solubles or 50% replacement of fish meal.

MAZOFERM increases pellet hardness by 10–20%.

MAZOFERM is an economical source of unidentified chick growth factors. Its use enhances dollar returns over feed cost by $25 to $30 per 1000 broilers.

PALATABILITY TESTS with feeds containing Mazoferm have shown decided chick preference for feeds containing Mazoferm.

Our new 28-page booklet summarizes experimental data covering three years' work. Write for your copy today.

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FEEDSTUFFS

SALES CLINIC SPEAKERS—A sales management clinic held by Dawe's Laboratories, Inc., Chicago, had some 60 persons registered recently to hear experts discuss old problems and new ideas in sales management. In the pictures are some of the speakers and principals of the clinic. In the first picture (left to right) are: Ralph Everett, Empire Sales Training Center, Buffalo; Robert Emmons, general sales manager, Wirthmore Feeds, Inc., Boston; Dr. Robert W. English, director of education, American Institute of Baking, Chicago; C. E. Alexander, director of sales, Illinois Farm Supply Co., Chicago, and R. W. Waite, Jr., vice president, Dannen Mills, Inc., St. Joseph, Mo. In the second picture are: Frank P. Berry, director of advertising and sales promotion, Nutrena Mills, Minneapolis; Simon Heemstra, director of advertising and promotion, McMillen Feed Mills, Ft. Wayne, Ind.; Dr. Morris Erdheim, director, technical service and development, Dawe's Laboratories, and John H. Hembree, Union Planters National Bank, Memphis.

CLINIC

(Continued from page 8)

ple, familiarize him with the product, help him and make it possible for him to develop social relationships.

Dr. Erdheim also discussed the relationship of management problems and disease to successful selling of feed. He said the nutrition packed into a feed can't sell it alone. Sound management and disease prevention are two additional factors which affect the profit picture. The feed man's interest must therefore extend beyond just selling a bag of feed.

Motivation

Motivation of dealers and salesmen was discussed by R. W. Waite, Jr., vice president, Dannen Mills, Inc., St. Joseph, Mo. He pointed out that any successful plan of motivation will have as a starting point the recognition of one or more of the basic human wants common to all human beings in our economy.

"Before considering each of the basic human wants individually, we should remind ourselves of one highly important factor," Mr. Waite said. "It is this: While the basic wants are inherent in practically all human beings, the successful motivator must remember that people are not always conscious of their wants, and sometimes must be led to become aware of them."

First of the basic human wants he listed was that people want a feeling of acceptance. They want to be liked. The second want is the feeling of importance. Third is the desire for a feeling of safety from harm, hunger, hardship, economic and emotional difficulties, safe from being without work. People want to accumulate private property as the fourth basic want, Mr. Waite said. Careful attention therefore must be given to the system of financial reward used by the firm. People also want to be dreamers. Finally, people want new experiences to satisfy their curiosity.

Motivation of the customer through advertising was discussed by Frank P. Berry, director of advertising and sales promotion for Nutrena Mills, Inc., Minneapolis.

The big question feed men must answer is: "Who are we going to be selling feed to and how much help is advertising going to be in getting the job done?" he said.

The problem is to determine what this customer wants; why he chooses one product over another. He doesn't want a specific feed directly, Mr. Berry said. The customer wants time —programs and systems that will enable him to feed more units with no increase in labor. He wants help and information that will improve his operation.

To reach this man, the advertising man must broaden his sphere to the whole marketing area. And since he is talking to fewer persons, advertising must be even more intensive than in the past, Mr. Berry said.

Another important selling area is the area of selling ideas to associates, said Ralph Everett, sales consultant, Buffalo, N.Y.

In meetings, top bracket salesmen say, the first thing to do is to state the purpose of the meeting, and state it so that it is something the audience wants to hear.

The second step is the presentation of a list of appeals showing how people will benefit if they consider taking action on what is said. The third step is the bid for action.

When making the sales presentation to associates, Mr. Everett said the leader must keep these points in mind: Tell it with enthusiasm. Combine the eye with the ear in making the presentation. Don't let the sales slip show. Get agreement on main points. Turn objections into advantages. Anticipate objections. Know when to shut up.

IOWA

(Continued from page 1)

and an average of 2 lb. per pig heavier at the end of a five-week lactation, than pigs nursing control sows. From ¼ to ½ a pig per litter was saved, above control litters.

The nutritionists are no longer recommending the use of antibiotics for sows during pre-gestation and gestation. They feel sows should be challenged with the organisms which cause scours and other enteric disorders. Sows then build up a high level of natural resistance which they can milk off in their colostrum as antibodies to their pigs. The scientists recommend relatively high levels of antibiotics in sow lactation and baby pig rations up to 50 lb., after which antibiotics may be dropped out of the rations except on farms with relatively high disease levels.

For adequate disease protection and growth stimulation, they say, it appears that sow lactation rations, pre-starters, starters and growers should contain 25, 50, 50 and 25 milligrams of antibiotics per pound of total rations, respectively.

Recent research indicates complete rations are best for growing-finishing pigs for maximum control over nutrient intake and cost. Many times, the efficiency of a feeding program is too often sacrificed to gain simplicity.

Current research shows that the maximum need for unidentified nutritional factors, such as condensed fish solubles and distillers dried solubles, is from the latter part of gestation, throughout lactation and during the baby pig period up to 50 lb.

An arsenical feed additive, 3-Nitro (3-nitro, 4-hydroxy phenylarsonic acid) appears so far to be causing the unusual effect of reducing backfat in finishing pigs, the scientists reported. Backfat measurements in two experiments with a total of 72 pigs showed 7 to 9% less backfat by live probe on pigs receiving the additive than on pigs not getting 3-Nitro.

"If our present research holds up," said Dr. Catron, "this may be one of our important discoveries—the first feed additive found to improve carcass leanness." The ISC researchers have not yet recommended use of 3-Nitro for this purpose, however, pending more tests.

Pigs on the arsenical tests gained an average of 1.7 lb. daily from weaning to market. This was no better than pigs in the experiment not on 3-Nitro, but the reduction in backfat thickness prompts further research with the "reducing" compound.

Based on a summary of 22 baby pig experiments at ISC, involving more than 2,400 pigs, a supplementation of rations with proteolytic enzymes improved gains 6% and feed efficiency 3%. Pepsin may not be the right enzyme, but at least the value of such enzymes has been established, Dr. Catron said. The right digestive enzyme is still being sought.

A relatively new anemia preventive, iron-dextran (Armidexan) is working well when injected into a pig's blood stream. One 2 cc. injection takes care of the baby pig's iron needs until it starts eating a good pig starter.

In a test with 329 pigs, those receiving no iron treatment weighed an average of 15 4 lb. Those receiving iron paste orally two times each week weighed 18.1 lb. each. Another lot getting clean, fresh dirt placed in their pens each day weighed 18.7 lb.; while pigs that were given one 2 cc. injection of the iron-dextran compound weighed 19.3 lb.

It was noted that pigs won't suffer temporary muscle stiffness if the injection is given in the flank instead of in muscle tissue.

For the final growing-finishing stage of feeding, the ISC researchers now are dividing it into two periods, (1) a growing period from 50 to 125 lb. and (2) a finishing period from 125 to market. This new change, they said, permits the opportunity to take full advantage of nutritional "carryover" from the baby pig feeding period; to adequately fortify the supplements with correct levels of calcium and phosphorus for the grower and finisher stages while holding up protein levels in the two supplements, and to use any feed additives which might increase carcass quality during either the growing or finishing stage.

Swine Housing

Swine housing needs much more attention now that such practices as multiple farrowing are causing farmers to handle pigs of all ages at all times of the year, pointed out Norval Curry, ISC agricultural engineer. Lack of adequate housing and equipment now is showing up sharply in terms of reduced feed efficiency and higher labor costs. The situation demands immediate solution.

In a series of talks, Mr. Curry and other engineers reviewed insulation and ventilation needs, heating equipment and equipment for feed handling and manure removal. Mr. Curry predicted: "As we improve the techniques and facilities for providing a more wholesome and sanitary environment for hogs at all ages of the life cycle, we will continue to reduce both the floor area and cubage allowed per animal just as we already have done in the poultry industry."

The symposium on integration included these speakers: Dr. Catron, representing Iowa State College; Jerry Hinshaw, Arbor Acres Farms, Springdale, Ark., speaking on integration in the poultry broiler industry; Maurice Johnson, Staley Milling Co., Kansas City, presenting experience in contract swine production; Ray Van Poucke, Ames (Iowa) Reliable Products Co., presenting his company's viewpoint on the implications of integration, and Herbert W. Pike, Whiting, Iowa, hog producer, who gave his observations on the topic.

A more detailed report on all subjects will be presented in later issues of Feedstuffs.

NEW OFFICE BUILDING—At left is the new brick office structure completed recently at the plant site of the Hayes & Stolz Industrial Manufacturing Co., Ft. Worth, Texas. The new facilities include executive offices, engineering department, drafting offices, bookkeeping and billing departments and a fireproof storage vault. Part of the drafting room is shown in the second picture. The new facilities include more than 3,300 sq. ft. of air-conditioned office space. Begun in 1945, the firm was incorporated in 1949 with Vernon Hayes as president and G. C. Stolz as secretary-treasurer and general production superintendent. Starting in custom-designed grain handling equipment, they later designed a line of feed milling equipment under their name. A fire destroyed a part of the company's plant last year.

THE FEED MARKETS

★ ★ ★ ★

Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Chicago: Demand fair; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 8@9¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Boston: Demand light; supply good; 600 D, 1,500 A 18¢ lb.; 300 D, 2,250 A 18½¢ lb.; 300 D, 1,500 A 17¢ lb.; 300 D, 750 A 15½¢ lb.

Seattle: Demand slow; trend steady; supply good; 300 D, 2,250 A 22¢ lb., 300 D, 1,500 A 19¢ lb., 300 D, 750 A 17¢ lb., all ex-warehouse, drums included.

Minneapolis: 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢ lb.

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½@15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢, 3,000 A 20@21½¢; f.o.b. Massachusetts, New York or Pennsylvania.

ALFALFA MEAL

Ft. Worth: Increased interest on dehydrated, poor on suncured; supply adequate; Kansas dehydrated, 17%, 100,000 A $49 by truck, $53.50@55.50 by rail; suncured No. 1 13% protein, ¼-in. grind, truck $38; Nebraska origin suncured, rail $39, immediate.

Chicago: Demand brisk; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $52@52.50; 17% with no A guaranteed $46.50@47.

Philadelphia: Demand slow; supply light; trend unsettled; 17% dehydrated $62.

Boston: Demand steady; supply fair; dehydrated, 17% $64.50; suncured, 13% $45.50.

Seattle: Demand slow; trend steady; supply good; 15% protein suncured $40, delivered, carlots; 136,000 A unit dehydrated $67, delivered, carlots.

St. Louis: Demand slow; trend steady; supply ample; 13% fine suncured $40; 17% dehydrated, 100,000 units A $52.

Buffalo: Demand slow; trend steady; supply adequate; $63, sacked, Boston.

Kansas City: Demand fair; trend steady to slightly stronger; supply adequate; though not pressing; dehydrated alfalfa meal with 17% protein and 100,000 units A guaranteed on arrival $47@47.50, sacked; 18% protein, 125,000 A meal $52, sacked; 17% 100,000 A pellets $43, bulk; non-guaranteed A meal 17% protein $36@39 and 15% protein $32@38, sacked, depending on quality; suncured market is very quiet with prices mostly unchanged; No. 1 fine ground $34@36; No. 1 ¼-in. $29.50@32, No. 2 ¼-in. $26.50@30, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $58.50@59.

Memphis: Demand poor; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $51.

Los Angeles: Demand slow; trend unchanged; supply ample; dehydrated, 17% protein, 100,000 A $48@49; dehydrated pellet meal, 17% protein, 100,000 A $46; suncured, 15% protein $44@44.50; suncured crumbles, 15% protein $46@46.50.

Minneapolis: 17% dehydrated, 100,000 units A $52.50; pellets, bulk $48.50; reground pellets, sacked, delivered $52; granules and oil treated, bulk, Minneapolis $51@51.50.

ANIMAL FATS (STABILIZED)

Ft. Worth: Demand good; supply adequate; prime tallow, tank cars 8½¢ lb.; drums 10¢ lb., f.o.b. north Texas packing plants with returnable drums.

Chicago: Demand good; supply limited; bleachable fancy tallow, tank truck or car lots 8¼¢ lb.; yellow grease 7¼@7⅝¢ lb.

Kansas City: Demand good; trend steady; supply adequate; bleachable fancy tallow 8¢ lb., tank car.

San Francisco: Demand fair supply ample; bleachable fancy 8⅝¢ lb.; yellow grease 7⅝¢ lb.

Louisville: Demand good; trend strong; supply fair; market up ¼¢ lb.; bleachable white 7⅞¢ lb.; white tallow 8¢ lb.; yellow grease 6⅝¢ lb.

St. Paul: Extremely tight supplies and scarce offerings with broad demand on all fronts; market goes to 8¢ lb. for bleachable fancy tallow, f.o.b. producers' plants.

BARLEY FEED

Baltimore: Demand quiet; supply adequate; $45.40.

Chicago: Demand good; supply light; $35.

Philadelphia: Demand slow; supply fair; pulverized $45.50.

Boston: Demand slow; supply light; $45.

San Francisco: Demand fair; supply ample; rolled $58, ground $57.

Seattle: Demand fair; trend firmer; supply good; whole $56, ground $56, rolled $58, all ex-warehouse, l.c.l., sacked.

Milwaukee: Demand good; supply fair; needles $0¢@$1.06; ground $25.

Los Angeles: Demand slow; trend firmer; supply ample; standard rolled $2.90 cwt., sacked; standard ground $2.90 cwt., sacked.

BENTONITE (SODIUM)

Chicago: Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50; f.o.b. Belle Fourche, S.D., minimum 30-ton carlots: 80 granular $13.50 net; 200 mesh fine $13.36 net.

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $30.21; 200 mesh fine $29.96.

BLOOD FLOUR

Louisville: Demand good; trend steady; supply ample; $95@105.

BLOOD MEAL

Chicago: Demand light; supply adequate; $115@125, guaranteed 80% protein.

Cincinnati: Demand good; trend steady; supply tight; $120; 70% protein $100.

Louisville: Demand good; trend steady; supply ample; $95@105.

San Francisco: Demand good; supply tight; $6 a unit of ammonia.

Los Angeles: Demand slow; trend steady; supply adequate; $6 a unit of ammonia.

BONE MEAL (STEAMED)

Chicago: Demand light; supply adequate; $80@85.

Boston: Demand and supply steady; $87.

Ft. Worth: Demand fair; supply adequate; $85, sacked, f.o.b. Ft. Worth, local manufacture.

San Francisco: Demand good; supply ample; $75.

Seattle: Demand steady; trend easy; supply good; $85, ex-dock, truck lots.

Buffalo: Demand good; trend steady; supply ample; $87.50.

Cincinnati: Demand fair; trend steady; supply short; $95, sacked, f.o.b. Cincinnati.

Louisville: Demand good; trend steady; supply light; $80@85.

Los Angeles: Demand slow; trend unchanged; supply adequate; imported $66.50.

BREWERS DRIED GRAINS

Ft. Worth: Demand very slow; supply moderate; 26% $57.85, delivered Ft. Worth.

Chicago: Demand fair; supply adequate; 26% $47.50@48.

Boston: Demand and supply steady; domestic 26% $57.50; Canadian, 22% $57@57.50.

Philadelphia: Demand slow; supply light; $59.50.

Milwaukee: Demand fair; supply good; $48.

San Francisco: Demand fair; supply ample; $54.

Buffalo: Demand poor; trend lower; supply good; $47.50, bulk, Boston.

Louisville: Demand fair; trend easy; supply good; down $2; $51.

Cincinnati: Demand poor; trend steady to lower; supply adequate; $53.

St. Louis: Demand slow; trend steady; supply adequate; $49.

Los Angeles: Demand and trend steady; supply limited; $49 bulk, $53 sacked.

BREWERS DRIED YEAST

Chicago: Demand good; supply limited; 10@11¼¢ lb. in carlots; 10¾@12¾¢ lb. l.c.l.

Boston: Demand and supply steady; 11¢ lb.

Buffalo: Demand good; trend steady; supply limited; $10.25 cwt.

Seattle: Demand slow; trend steady; supply ample; $12 cwt.

San Francisco: Demand fair; supply good; 10¢ lb.

Louisville: Demand fair; trend steady; supply normal; 10@10¼¢ lb.

St. Louis: Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 12¢ lb. in less than ton lots.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11⅛¢ lb.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11⅛¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11⅛¢ lb.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb., ton lots 11¢ lb., f.o.b. New Jersey.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10⅝@12½¢ lb., l.c.l.

Los Angeles: Demand and trend steady; supply limited; 10¢ lb. in 5-ton lots; 11¢ lb. in less than 5-ton lots.

BUTTERMILK-CONDENSED

Boston: Demand and supply light; 3½¢ lb.

Chicago: Demand slow; supply adequate; $3.25@3.50 cwt. in carlots.

Philadelphia: Demand dull; supply fair; $4.25 cwt.

San Francisco: Demand fair; supply good; $5 cwt.

Los Angeles: Demand slow; trend unchanged; supply adequate; 5½¢ lb. in 100-lb. lots; 4¾¢ lb. in 500-lb. lots.

CALCIUM CARBONATE

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

Cincinnati: Demand fair; trend steady; supply adequate; $8@9 cwt.

Los Angeles: Demand slow; trend unchanged; supply ample; $10.25.

Minneapolis: Plain $11; iodized (½ lb. KI per ton) $14.45; iodized manganesed $18.90, in 100-lb. bags.

Chicago: Plain $8.90 ton in 100-lb. bags, delivered.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $15.30, flour $10.30.
Buffalo: Crystals $16.16, flour $11.16.
Toledo: Crystals $18.06, flour $13.06.
Boston: Crystals $16.69, flour $11.69.
Limecrest, N.J.: Crystals $10.80, flour $5.50.

CHARCOAL

Boston: Demand and supply light; $95.

Chicago: Demand quiet; supply adequate; poultry charcoal $106 in 50-lb. multiwalls.

San Francisco: Demand steady; supply ample; $141.

Cincinnati: Demand good; trend steady; supply adequate; briquets $120, 25-lb. bags, f.o.b. warehouse, Cincinnati.

Los Angeles: Demand slow; trend unchanged; supply ample; hardwood poultry $156 in less than ton lots; $144.40 in ton lots.

COCONUT MEAL

San Francisco: Demand fair; supply ample; solvent $52; expeller $59.

Seattle: Demand and trend steady; supply ample; $62, ex-dock, truck lots.

Los Angeles: Demand fair; trend steady; supply ample; copra cake $57, offshore-February-March.

COD LIVER OIL (FORTIFIED)

Boston: Demand light; supply good; 600 D, 2,250 A 21¢ lb.; 300 D, 2,250 A 20¢ lb.; 300 D, 1,500 A 17½¢ lb.

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 16½@19¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

CONDENSED FISH SOLUBLES

Boston: Demand good; supply short; 5¢ lb.

New York: Demand and supply good; trend steady; 4⅞@5¢ lb., f.o.b. eastern shore.

Los Angeles: Demand slow; trend steady; supply tight; 5½¢ lb.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $47.80, meal $80.80.
Atlanta: Feed $53.98, meal $86.98.
Birmingham: Feed $52.64, meal $85.64.
Boston: Feed $52.84, meal $85.84.
Chicago: Feed $41, meal $74.
Cleveland: Feed $49.14, meal $82.14.
Denver: Feed $51.51, meal $84.51.
Ft. Worth: Feed $49.96, meal $82.96.
Indianapolis: Feed $46.36, meal $79.36.
Kansas City: Feed $41, meal $74.
Louisville: Feed $48.21, meal $81.21.
New Orleans: Feed $51.20, meal $84.20.
New York: Feed $52.43, meal $85.43.
Norfolk: Feed $51.71, meal $84.71.
Philadelphia: Feed $52.02, meal $85.02.
Pittsburgh: Feed $49.96, meal $82.96.
St. Louis: Feed $41, meal $74.

CORN OIL MEAL

Louisville: Demand fair; trend strong; supply ample; up 50¢; $50.48.

Cincinnati: Demand fair; trend steady; supply adequate; $51.

COTTONSEED OIL MEAL

Boston: Demand fair; supply adequate; $78.90.

Chicago: Demand slow; supply adequate; hydraulic $72.50@73; solvent $72@72.50.

Ft. Worth: Demand fair; supply sufficient; carlots: 41% old process $57.50@59 f.o.b. central Texas, $60 f.o.b. Ft. Worth area; solvent 41% low gossypol $56@57, delivered Ft. Worth; pellets $2 additional; cottonseed hulls $20, f.o.b. Ft. Worth.

Philadelphia: Demand slow; supply fair; $77.

Louisville: Demand fair to good; trend stronger; supply normal; up $2; old process $70.50; new process $69.50.

San Francisco: Demand good; supply ample; expeller $54; solvent $53.

Kansas City: Demand very strong, bad weather in South and higher trend of soybean meal may be factors; trend steady to firming; supply tightening as production slows and demand picks up; old process meal $61.50@62, sacked, Memphis; solvent meal $60, sacked, Memphis; $61@62, sacked, west Texas, where it is more plentiful.

Cincinnati: Demand poor; trend lower; supply adequate; solvent $70; old process $71.50.

Seattle: Demand fair; trend easy; supply good; 41% expeller process $61, delivered truck lots.

Buffalo: Demand poor; trend steady to higher; supply fair; $77.50, sacked, Boston.

Wichita: Demand fair; supply sufficient; 41% old process $64.

St. Louis: Demand fair; trend higher; supply tight; $65.75.

Los Angeles: Demand slow; trend unchanged; supply ample; $50@51.

Memphis: Demand good; trend higher; supply scarce; prime 41% protein, old process $62, sacked; new process, 41% solvent $62, sacked.

Atlanta: Demand good; trend strong; supply limited; 41% $67, sacked, immediate.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $48 ton, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply adequate; 4,000,000 U.S.P. units per lb.; 15¢ lb. in ton lots; less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 25¢ lb.; ton lots and less 30¢ lb.

D ACTIVATED ANIMAL STEROL, POWDERED

Kansas City: Demand fair; trend steady; supply adequate; 1,500 ICU 9½@10¢ lb.; 3,000 ICU 11½@12¢ lb., ton lots or higher.

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17%, carload $60, truckload $60.75, net ton, f.o.b. Coronet in 100-lb. multiwall bags, $57 and $57.75 in bulk.

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales, in 100-lb. multiwall bags, $3 less in bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $69.50 net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $66.50 in bulk.

Cincinnati: 18% phosphorus $81, sacked; 13% phosphorus $64.98, sacked, Cincinnati.

DICALCIUM PHOSPHATE

Texas City, Texas: 19% minimum phosphorus, 25% minimum calcium, 28% maximum, 0.11% maximum fluorine, granular $79.80 net ton, f.o.b. Texas City in 100-lb. multiwall bags; 18.5% minimum phosphorus, 25% minimum calcium, 28% maximum, 0.11% maximum fluorine, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers $3 net ton less than bagged material.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more, $94.50 basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

Bonnie, Fla.: Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $93.90, delivered; $3 less in bulk.

Trenton, Mich.: Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bag.

Cincinnati: 18½% phosphorus $92@93.

DISTILLERS DRIED GRAINS

Cincinnati: Demand poor; trend lower; supply adequate; truck prices: light $51, dark $52.50.

San Francisco: Demand fair; supply ample; solubles $85.

Louisville: Demand fair; trend steady; supply light; bourbon grains: light $53, dark $54, solubles $77.

Buffalo: Demand fair; trend steady to lower; supply adequate; $58, bulk, Boston.

Seattle: Demand fair; trend steady; supply ample; $63, delivered, truck lots.

Boston: Demand good; supply fair; light $61.50, dark $62.

Philadelphia: Demand slow; supply light; $62.

DRIED BEET PULP

Ft. Worth: Demand slow; supply sufficient; carlots, 50-lb. papers $57.85, February delivered Ft. Worth.

Cincinnati: Demand fair; trend steady; supply adequate; $55.

San Francisco: Demand good; supply fair; $43.02.

Seattle: Demand slow; trend steady; supply good; $43, delivered, carlots, new crop.

Buffalo: Demand fair; trend steady; supply adequate; $61, sacked, Boston.

Milwaukee: Demand and supply fair; plain $50, molasses $50.

Los Angeles: Demand and trend steady; supply ample; molasses $45.50.

Atlanta: Demand slow; trend steady; supply ample; $64.25, sacked, immediate.

New Orleans: Demand good; trend steady; supply sufficient; $57.50@58.

DRIED BUTTERMILK

Milwaukee: Demand and supply fair; $9.50 cwt.

Buffalo: Demand good; trend steady; supply limited; $10.82 cwt.

Wichita: Demand slow; supply sufficient; $8 cwt.

San Francisco: Demand fair; supply ample; 11¢ lb.

Louisville: Demand fair; trend steady; supply ample; 10¼@11¢ lb.

Chicago: Demand and supply fair; medium acid $9@9.50; sweet cream $9.25@9.75 cwt. in carlots.

Ft. Worth: Demand very slow; supply sufficient; local production $10 cwt., f.o.b.

Minneapolis: Firm trend; good demand; limited supplies; $9.50@9.75 cwt.

New Orleans: Demand fair; trend firm; supply adequate; $9.50@10 cwt.

Los Angeles: Demand slow; trend unchanged; supply adequate; 11¢ lb.

DRIED CITRUS PULP

Buffalo: Demand fair; no quotations.

Boston: Demand and supply steady; $40@41, f.o.b. Florida.

San Francisco: Demand good; supply fair; meal $52.

Atlanta: Demand good; trend steady; supply ample; $54, immediate; meal $44, immediate.

Los Angeles: Demand good; trend steady; supply negligible; nominal prices only; orange pulp $39 bulk, $44 sacked; lemon pulp $37 bulk, $42 sacked.

New Orleans: Demand good; trend steady; supply light; $51@52, immediate.

DRIED SKIM MILK

Cincinnati: Demand fair; trend steady; supply adequate; 10¼@11¢ lb.

San Francisco: Demand and supply fair; 13¼¢ lb.

Louisville: Demand fair; trend steady; supply ample; 11¼@12¢ lb.

Buffalo: Demand fair; trend steady; supply ample; spray $10.65 cwt.; roller $11.50 cwt.

Milwaukee: Demand and supply fair; $10.75.

Chicago: Demand improved; supply tightening; $10.25@10.50.

Boston: Demand fair; supply tight; 12¢ lb.

Philadelphia: Demand dull; supply fair; $12.50 cwt.

Minneapolis: Steady trend; fair demand and supply; $10.75@11 cwt.

New Orleans: Demand fair; trend steady; supply adequate; 10¼@11¢ lb.

Los Angeles: Demand slow; trend unchanged; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.

DRIED WHEY

Cincinnati: Demand fair; trend steady; supply adequate; $5.35 cwt.; sweet $5.75 cwt.

Kansas City: Demand fair; trend steady; supply light; $5.10 cwt., f.o.b. producers' points for both regular and partially delactosed.

San Francisco: Demand steady; supply good; $5.50 cwt.

Seattle: Demand and trend steady; supply good; $6.25 cwt., ex-warehouse, l.c.l.

Louisville: Demand fair; trend steady; supply normal; 6@6¼¢ lb.
Boston: Demand steady; supply plentiful; $5.90 cwt.
Chicago: Demand good; supply ample; $5.10, f.o.b. plant.
Philadelphia: Demand dull; supply fair; $6.25 cwt.
Ft. Worth: Demand fair; supply adequate; carlots, standard $6.10 cwt., sacked, delivered Ft. Worth or any Texas points or in ton lots, f.o.b. warehouse, Ft. Worth.
Minneapolis: Steady trend; good demand and supply; $5.40@5.60 cwt., other sources quote $5.10 cwt., f.o.b. producers' points for both regular and partially delactosed.
Los Angeles: Demand slow; trend unchanged; supply adequate; $5.75 cwt. in carlots; $6 cwt. in l.c.l.
New Orleans: Demand slow; trend firm; supply ample; $6.10@6.25 cwt.

FEATHER MEAL (HYDROLYZED)

Boston: Demand steady; supply plentiful; $78, f.o.b. eastern shipping points.

FISH MEAL

San Francisco: Demand fair; supply ample; Peruvian fish meal $2.20 a unit of protein.
Cincinnati: Demand fair; trend steady; supply adequate; $120@130.
Louisville: Demand slow; trend steady; supply normal; $125@135.
Buffalo: Demand good; trend steady; supply ample; 60% protein menhaden $140 bulk, $145 sacked.
Seattle: Demand fair; trend firm; supply ample; $2.30 a unit protein, f.o.b. truck, Vancouver, B.C.
Milwaukee: Demand and supply fair; 60% $157, Milwaukee.
Ft. Worth: Demand good; supply limited; imported Angola sardine 60% protein $128, f.o.b. Houston, immediate.
Chicago: Demand moderate; supply adequate; eastern menhaden fish meal, 60% protein $130; western blended, 60% protein $130; Northwest herring-salmon blend $128 @130; Canadian herring, 73% protein $2.15 a unit of protein; 60% blended $150, delivered Midwest points.
Boston: Demand and supply steady; 60% $130.
Minneapolis: Demand fair; trend firm; supply limited; 70% herring, West Coast $2.20 a unit; 60% meal, delivered, Minneapolis $147.
New Orleans: Demand fair; trend steady; supply sufficient; menhaden 60% $128@130 papers; scrap $123@126; mixed meal, Peru, 60% $127@129, burlaps, f.o.b. Gulf.
Los Angeles: Demand good; trend firm; supply limited to scarce; $2.20 a unit of protein.

HAY

Boston: Demand steady; supply ample; No. 2 timothy $38@40.
Louisville: Demand better; trend steady; supply good; local hay, any variety, No. 1 $20@25, No. 2 $19@23; straw $18@20, good demand.
Cincinnati: Demand poor; trend steady; supply adequate; No. 1 timothy $22.50; No. 1 red clover $24; No. 1 second cutting green alfalfa $28; No. 1 red clover mixed $27; wheat or oat straw $22.
Seattle: Demand slow; trend weak; supply good; alfalfa U.S. No. 2 green $22, delivered, truck lots.
Wichita: Demand slow; supply ample; prairie $16@18; alfalfa $16@22.
Philadelphia: Demand slow; supply light; $32@35.
Ft. Worth: Demand slow for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $40@42, No. 2 $38@40; prairie No. 2 $28@30; No. 2 Johnson grass $26@28; delivered Texas common points.
Los Angeles: Barely steady; heavy offerings; U.S. No. 1 $32@34; U.S. No. 2 leafy $30@31; U.S. No. 2 green $30@31; U.S. No. 2 $27@28.

HOMINY FEED

Chicago: Demand fair; supply improving; $40.50@41.
Boston: Demand steady; supply adequate; $50.50.
Kansas City: Demand slow; trend steady; supply adequate; yellow or white $36, sacked; $3.50 less for bulk.
Cincinnati: Demand fair; trend steady; supply adequate; $43.50.
Louisville: Demand slow; trend easy; supply normal; $44.50.
Seattle: Demand slow; trend firmer; supply good; $55, delivered, sacked, carlots.
Buffalo: Demand fair; trend steady; supply good; $46, bulk, Boston.
St. Louis: Demand fair; trend steady; supply ample; yellow $41.50.
Milwaukee: Demand fair; supply good; $41, sacked, Milwaukee.
New Orleans: Demand fair; trend easier; supply ample; $47.50@48.
Memphis: Demand nil; trend steady; supply ample; white $46.50.

LINSEED OIL MEAL

Milwaukee: Demand good; supply fair; old process $64; new process $57.50.
Seattle: Demand slow; trend easy; supply limited; $75, delivered carloads, 34% protein.
Wichita: Demand fair; supply sufficient; 34% $73.50.
Kansas City: Demand steady; trend firm; supply adequate, despite lack of production; solvent meal $47@47.50, bulk, Minneapolis; old process meal $53.50.
Louisville: Demand fair; trend steady; supply normal; old process $71.80, new process $65.80.
San Francisco: Demand fair; supply ample; $65.
Cincinnati: Demand fair; trend steady; supply adequate; new process $63; old process $69.50.
Chicago: Demand fair; supply adequate; solvent $59@59.50; expeller $64.50@65.
Philadelphia: Demand and supply fair; 34% $70.
Ft. Worth: Demand slow; supply adequate; carlots, 34% extracted, February-March-April $72.13.
Boston: Demand and supply limited; $64.80 in bulk.
Minneapolis: Trend steady; demand fair; supplies ample; $47@47.50.
Los Angeles: Demand slow; trend steady; supply ample; local production, 29% protein $61@62.
New Orleans: Demand slow; trend steady; supply ample; 32% or higher protein $70 @70.50.

MALT SPROUTS

Chicago: Demand fair; supply adequate; No. 1 $33.50@34.
Boston: Demand spotty; supply limited; $43.50 in bulk.
Milwaukee: Demand good; supply fair; oddweights $34; evenweights $35.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $42.
New Orleans: Demand fair; trend steadv; supply adequate; $43@43.50, bulk.

MEAT AND BONE MEAL

Boston: Demand and supply steady; $1.15 a protein unit; converted 50% $70.
Chicago: Demand light; supply adequate; 50% protein $80@87.50.
Ft. Worth: Demand good; supply light; meat and bone, 50% $85@87, f.o.b. or delivered Ft. Worth.
Kansas City: Demand strong; trend firm to higher; supply tight, though shipments into area from outside have alleviated situation somewhat; 50% meat and bone scraps $93, sacked.
Cincinnati: Demand good; trend steady; supply short; 50% $89.50, sacked, f.o.b. Cincinnati.
San Francisco: Demand good; supply fair; $1.60 a unit of protein.
Louisville: Demand good; trend strong; supply fair; $87.50@92.50.
St. Louis: Demand good; trend higher; supply limited; $92.
Seattle: Demand and supply good; trend firmer; 50% protein $77.50, ex-warehouse.
Wichita: Demand good; supply insufficient; 50% $95, f.o.b. plant; 55% no quotations, no offerings.
Buffalo: Demand good; trend stronger; supply ample; 50% meat scraps $82.50 bulk, $87.50 sacked.
St. Paul: Very firm market because of short supply; fair demand for 50% meat and bone scraps $90@93.
New Orleans: Demand good; trend stronger; supply very light; 50% $86@84.50.
Los Angeles: Demand good; trend firmer; supply limited; $1.70 a unit of protein.
New York: Demand excellent; trend higher; supply good; 50% $75, 55% $80.50, bulk; 50% $78, 55% $83.50, sacked.

MILLFEED

Minneapolis: Strong local interest with good eastern demand cleaned up supplies; bran interest very good; bran $34.50@35; standard midds. $33.50@34.50; flour midds. $37@37.50; red dog $38.50@39.
Kansas City: Demand stronger; trend steady to firmer; supply tight for nearby, especially sacked bran; bran $33.50@34.25, shorts $34.25@35, sacked; bran $29.25@30.25, shorts $32@32.75, middlings $31@31.75, bulk.
Wichita: Demand good for mixed cars; supply adequate; basis Kansas City; bran $33.25@33.75, shorts $34.50@35; both bran and shorts advanced 25¢ ton, compared with the preceding week.
Ft. Worth: Demand fair on bran, slow on shorts; moderate offerings of bran, adequate on shorts; carlots, burlaps, prompt, bran $40.50@41.50, gray shorts $42@43, delivered Texas common points; unchanged on bran and 50¢ lower on shorts compared with previous week.
Chicago: Bran and standard midds. advanced in price, moving up behind a demand from feed manufacturers. Needs created by cold weather prompted the upturn, observers say. Other types of millfeeds held steady. Quotations: bran $39@39.50, standard midds. $39@39.50, flour midds. $40@41, red dog $42@43.
St. Louis: Demand fair; trend steady; supply ample; bran $38.75@39.25, shorts $39.50@40, sacked; bran $34.25@34.75, shorts $37@37.50, middlings $36@36.50, bulk.
Cincinnati: Demand fair; trend steady to lower; supply adequate; bran $44.40, middlings $43.50.
Boston: Demand and supply light; bran and middlings $50.
Buffalo: Market strictly a weather affair. Railroads bogged down and highways were clogged with snow hampering both the dairy farmer and the feed manufacturer. Price structures based mostly on supply factors. Both bran and middlings ended unchanged after a fall and a rise of $1 earlier in the week. Red dog held unchanged. Quotations Feb. 19: bran $43.50 @44, standard midds. $42.50@43, red dog $46.50@47.50. The bulk differential on bran was $5 and $4.50 on middlings.
New York: Demand and supply good; trend upward; bran $51.50@52; standard midds. $51.50@52.
Philadelphia: Demand spotty; supply fair; bran $49.50, standard midds. $50.50, red dog $52.
New Orleans: Demand fair to good; trend almost steady; supply sufficient; bran $42@43.75; shorts $43@44.50.
Louisville: Demand good; trend stronger; supply normal; bran $44.65, mixed feed $45.90, shorts $47.40, middlings $46.30.
Memphis: Demand poor; trend steady; supply ample; wheat bran $41.75, gray shorts $42.75, standard midds. $42.75.
Seattle: Demand good; trend firm; supply limited; $41, delivered, common transit points, carlots.
San Francisco: Demand fair; supply ample; millfeed $46.25; red bran $51.25.
Los Angeles: Demand improved; trend firmer; light offerings; standard mill run $46@46.50; red bran $49@50.

MINERAL FEED

Ft. Worth: Demand fair; supply ample; all-purpose granules $89, block $94; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $99, block $103; hog mineral phosphorus 3½% granules $88; phosphorus 2% $78 (all in 50-lb. paper bags).
San Francisco: Demand steady; supply good; all-purpose with iodine $70.
Seattle: Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $85, ex-warehouse.
Wichita: Demand good; supply adequate; all-purpose with iodine, 50-lb. blocks $95; 100-lb. bags $90, f.o.b. plant.
Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

MOLASSES

Milwaukee: Demand and supply fair; blackstrap 13¢ gal., f.o.b. New Orleans.
Boston: Demand steady; supply plentiful; 18½¢ gal. in tank cars.
Ft. Worth: Demand fair; supply sufficient; blackstrap 14¢ gal., f.o.b. Houston; delivered Ft. Worth truck $31.64, seller's market price on date of shipment.
Kansas City: Demand quiet; trend steady; supply adequate; 13@13¼¢ gal., tank car, New Orleans.
Cincinnati: Demand fair; trend steady; supply adequate; 13¼¢ gal., New Orleans.
San Francisco: Demand and supply good; $24, f.o.b. cars, Richmond, Cal.
Louisville: Demand slow; trend steady; supply normal; 13¼¢ gal., tank car lots, f.o.b. Gulf ports.
St. Louis: Demand slow; trend steady; supply ample; 13¢ gal., New Orleans.
Seattle: Demand fair; trend easy; supply good; $24, f.o.b. Seattle, tank car lots or truck lots.
Buffalo: Demand and supply good; 18½¢ gal., f.o.b. Albany.
Los Angeles: Demand fair; trend unchanged; supply ample; $24 bulk, tank cars; $24.25 bulk, tank trucks.
Minneapolis: Trend steady; fair demand; ample supplies; 13¼¢ gal., f.o.b. New Orleans.
New Orleans: Demand fair; trend steady; supply adequate; 14¢ gal., tank cars; 13½¢ gal., trucks; 600-lb. refillable drums $9.11.
New York: Demand poor; trend steady; supply good; blackstrap 18¢ gal., tank cars, tank wagons, f.o.b. New York.
Memphis: Demand poor; trend higher; supply ample; blackstrap 13¼¢ gal., tank car, f.o.b. New Orleans.
Atlanta: Demand fair; trend steady;

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supply ample; citrus $20, bulk, f.o.b. Florida producing points, immediate.

NIACIN

New York: Trend steady; $8 kilo, 50-kilo lots; $8.10 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $21; pulverized white oats $46.50@50.50; rolled oats $84@89.

Louisville: Demand fair; trend unsettled; supply normal; reground $23.30, rolled oats $87.30, feeding oatmeal $79.30, pulverized white oats $48.80, crimped white oats $69.80.

Seattle: Demand fair; trend firmer; supply ample; whole oats $59, ground oats $59, rolled oats $61, all ex-warehouse, l.c.l., sacked.

Chicago: Demand fair; supply adequate; reground oat feed $15.50@16; fine ground feeding oatmeal $69@70; feeding rolled oats $81.

Ft. Worth: Demand fair; supply sufficient; oat millfeed $40.95; reground oat millfeed, 3% protein, sacked $25.45; 8% protein, bulk $27.

Boston: Demand and supply spotty; white pulverized, domestic $52; Canadian $53; reground oat feed, none offered.

Philadelphia: Demand slow; supply fair; pulverized white $53.25; Canadian oat feed $29; domestic oat feed $28.

Los Angeles: Demand slow; trend easier; supply ample; pulverized, local production $60.

Minneapolis: Steady trend; fair demand; good supplies; feeding rolled oats $80@83; pulverized $43; feeding oatmeal $68@69; crimped oats $60; reground oats $17.

New Orleans: Demand fair; trend firmer; supply adequate; ground $68@68.50; pulverized $68.50@69.

Memphis: Demand poor; trend steady; supply ample; 3½% protein, reground oat feed $22.35.

OYSTER SHELL

Boston: Demand and supply steady; in paper $25.36.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Cincinnati: Demand fair; trend steady; supply adequate; $21.75.

Louisville: Demand good; trend steady; supply normal; in 80-lb. paper $23.17, 50-lb. $23.42, 25-lb. $25.67.

Seattle: Demand and trend steady; supply good; eastern $39, l.c.l., ex-warehouse.

New Orleans: Demand good; trend steady; supply adequate; $15@16 local.

Los Angeles: Demand slow; trend unchanged; supply ample; $14.80.

PEANUT OIL MEAL

Milwaukee: Demand and supply fair; 26% $36.50.

Atlanta: Demand fair; trend strong; supply limited; 45% $60, sacked, immediate.

PEAT MOSS

San Francisco: Demand fair; supply ample; $3.75 bale.

Seattle: Demand and supply good; trend steady; $3.25 bale, delivered, truck lots.

Chicago: Demand and supply moderate; $3.85@3.95, standard 7½ cu. ft. bale.

Boston: Demand and supply seasonally steady; $3.15 bale in carlots.

Philadelphia: Demand slow; supply light; $2.98, f.o.b. pier.

Los Angeles: Demand fair; trend unchanged; supply ample; Canadian, 6.1 cu. ft. bales $3.85.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Demand good; trend steady; KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.81, 200 lb. in 100-lb. drums $1.83, 25-lb. drums $1.86, f.o.b. Cincinnati.

New York: Trend steady; granular or crystals $1.90 lb. in 250-lb. drums, $1.92 lb. in 100-lb. drums, $1.95 lb. in 25-lb. drums; 90% KI in calcium stearate or carbonate mixtures, $1.80 lb. in 250-lb. drums or 200-lb. lots, $1.83 lb. in 100-lb. drums, $1.86 lb. in 25-lb. drums; f.o.b. New York, New Jersey or Pennsylvania; freight allowed to destination on 100-lb. drums or larger packings.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¼¢ gram in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

New York: Trend steady; feed grade (in feed supplements) 4¼¢ gram in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

San Francisco: Demand fair; supply ample; bran $45, polished $49.

Ft. Worth: Demand fair; very light offerings; carlots, rice bran, nominal $32@33, prompt shipment, f.o.b. south Texas rice mills; hulls $2, f.o.b. mills.

Atlanta: Demand fair; trend steady; supply limited; bran $47, sacked, immediate.

Los Angeles: Demand slow; trend easier; supply adequate; bran, California production, high fat content $50.

SCREENINGS

Cincinnati: Demand fair; trend steady; supply adequate; Canadian $22.50, bulk, Cincinnati.

Ft. Worth: Demand fair; supply sufficient; 12% protein, ground $32, nominal.

Buffalo: Demand fair; trend steady; supply good; ground $28, sacked, New York; unground $19.50, bulk, New York.

Chicago: Demand fair; supply plentiful; ground grain screenings $25; Canadian, bulk $17.

Minneapolis: Market unchanged; not much supply or demand; country run $16@20; lights $6@12; mediums $13@20; heavies $21@30; Canadian, bulk $11; Canadian ground $13; flaxseed screenings $20; oil type flaxseed screenings, 15% basis $24, nominal.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $30.40@30.67.

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Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.88@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.45.
St. Louis: $24.14@24.27.

SORGHUMS

Ft. Worth: Demand improved; offerings light; carlots, bulk, No. 2 yellow milo $2.18@2.20 cwt., Texas common points.

Cincinnati: Demand fair; trend steady; supply adequate; $2@2.20 cwt.

Los Angeles: Demand and trend steady; supply ample; milo $2.47½ cwt., bulk.

SOYBEAN OIL MEAL

Kansas City: Demand strong for nearby, but not broad; trend steady to higher; supply tight for immediate, adequate for March, strength may be due to better demand caused by substitution of vegetable protein for animal protein which is much stronger; meal for Kansas City and western shipment $47, bulk, Decatur, for nearby; $45.50@46.50 for March; unrestricted meal $49.50@50.50.

Cincinnati: Demand fair; trend higher; supply adequate; $48@49, bulk, Decatur.

San Francisco: Demand fair; supply ample; $77.

Louisville: Demand fair; trend strong; supply ample; $61.43.

Chicago: Soybean oil meal continued to climb and supplies for immediate shipment were not offered. Only shipments for March availability are being offered. Trade is brisk as feed manufacturers, who are enjoying good business, need supplies. Quotations: 44% soybean oil meal $59.50@60.

Decatur: Demand and supply fair; 44% bulk, unrestricted $49@49.50.

Boston: Demand and supply steady; 44% $46; 50% $51.50, both f.o.b. Decatur in bulk.

Philadelphia: Demand slow; supply fair; 44% $45.50, bulk, Decatur.

Ft. Worth: Demand good; limited offerings for immediate shipment; carlots, 44% $66@68 depending on origin and tonnage, immediate-first half March, 50¢ higher April-September shipment; truck delivery, prompt $61.

St. Louis: Demand good; trend higher; supply tight; $60.

Seattle: Demand steady; trend firm; supply good; $79, delivered, carlots.

Milwaukee: Demand good; supply fair; $48, bulk, Decatur.

Wichita: Demand good; supply ample; 44% $61, 50% $69, f.o.b. Wichita.

New Orleans: Demand fair; trend steady; supply ample; 44% $66.50@67.

Memphis: Demand good; trend higher; supply scarce; prime 44% solvent $57, sacked, f.o.b. Memphis.

Atlanta: Demand good; trend strong; supply ample; 44% $68, sacked, immediate.

Minneapolis: Strong trend; demand and supplies good; $54.50.

Los Angeles: Demand slow; trend firmer; supply tighter; $78.97.

TANKAGE

Wichita: Demand good; supply insufficient; 60% $95, f.o.b. plant.

St. Louis: Demand good; trend higher; supply limited; $85.

Louisville: Demand good; trend steady; supply ample; 60% $90@95.

Kansas City: Demand very strong and active, although some resistance found at high levels; trend much firmer; supply tight with kills continuing to be light; 60% digester $97.50@98, sacked.

Ft. Worth: Demand fair; supply extremely light; 60% digester $86@89, f.o.b. Ft. Worth.

Chicago: Demand light; supply adequate; 60% protein $85@92.50.

Cincinnati: Demand good; trend strong; none available; 60% digester $98.50, sacked, f.o.b. Cincinnati.

St. Paul: Market very firm because of short supply situation; fair demand for 60% digester at $92@95.

New Orleans: Demand light; supply adequate; trend stronger; 60% $97.50@100.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100-lb. drums $1.70; in 25-lb. drums $1.75; freight allowed to destination.

New York: Demand and supply good; trend steady; 100-lb. drums $1.70 lb., 25-lb. drums $1.75 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

Rochester, N.Y.: Demand and supply good; trend steady; 100-lb. drums $1.70 lb., 25-lb. drums $1.75 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

WHEAT GERM MEAL

Buffalo: Demand and supply fair; trend steady; $55, sacked, Boston.

New Orleans: Demand good; trend steady to stronger; supply limited; $62@64, cottons.

OREGON

(Continued from page 7)

growth, feed conversion and the "sticky dropping" condition and compared favorably to an all-corn mash with no added fat.

Wet litter and sticky dropping conditions were also noticeably improved with enzyme treatment of all-barley mash feeds. While resulting in some improvement in growth and only a slight increase in efficiency over the all-barley mash alone, the treatment failed to provide results comparable to an all-corn mash feed containing no added fat.

An amylolytic enzyme (Clarase 300) was used in the experiment at levels varying from 0.25-1 gm. per pound of feed. Data was based on trials of eight weeks. Dr. Arscott pointed out, however, that growth was improved as the level of enzyme was increased to 2 gm. per pound.

A combination of pelleting, plus Clarase 300 (2 gm. per pound) and 3% fat added to the barley mash, improved growth and the wet litter condition. "Feed conversion, while improved, did not compare favorably to the all-corn mash," Dr. Arscott stated. Water consumption was not greatly decreased on barley feeds treated with enzymes or soaked.

Replacement of corn by barley in all-mash or mash-scratch rations for White Leghorn pullets resulted in comparable egg production but decreased efficiency in feed required per dozen eggs.

Wheat also appeared comparable to corn from the egg production standpoint; but did not measure up in feed efficiency per dozen eggs.

New Hampshire pullets fed an all-mash barley feed failed to lay at a comparable rate to those fed corn. Feed requirement per dozen eggs was also increased.

Turkey Breeder Hens

Dr. F. H. Kratzer, University of California department of poultry husbandry, reported recent findings on nutritional requirements of turkey breeder hens. He said some turkey growers feel poorer fertility is obtained in hens that have become excessively fat. This has led to use of low-energy holding rations beyond 20 weeks of age.

Where total feed or energy is restricted, he emphasized the importance of supplying the ration with vitamins to give the hen a build-up of stores for the start of the breeding season.

"In egg production, key nutritional requirements are protein (about 15%) and vitamin A. Other nutritional requirements are less than those needed for hatchability, so are seldom of concern," Dr. Kratzer stated.

"Nutrient requirements for hatchability, however, are of greater concern since the breeder ration must supply the egg with sufficient nutrients for normal embryo development. Hatchability has been greatly reduced and poult mortality increased from vitamin A deficiency. Vitamin A requirement for turkeys is somewhat higher than for chickens. Vitamin D requirements are about twice those for chickens."

Other major nutritional requirements reported for turkeys are vitamin E, especially late in the breeding season, riboflavin and pantothenic acid at considerably higher levels than for chickens.

Pyridoxine and biotin appear well supplied by usual breeder rations, and additions of niacin are unnecessary in a practical breeder ration, Dr. Kratzer said. He added that vitamin B_{12}, which is important for chicken hatchability, has little effect upon turkey hatchability. However, poults hatched late in the season from hens fed rations deficient in vitamin B_{12} responded to the vitamin in their ration.

The researcher cautioned against use of feeds that might have adverse effects. Some samples of cottonseed meal in chicken breeder rations can reduce hatchability. Biologically-tested cottonseed meal should be safe for use in turkey rations, he added.

Since alfalfa meal contains a growth inhibitor for chicks and poults, it was tested for possible detrimental effect on breeder hens. Alfalfa meal levels up to 30% of the ration, however, caused no reduction in hatchability or egg production. Also, there was no carryover to the poults. This means that alfalfa meal may be used liberally in breeder rations and may thus supply some of the vitamins that would be difficult to obtain otherwise, Dr. Kratzer concluded.

Protein Sources

Dr. Kratzer also reviewed protein sources for poultry. He said two prime factors to consider are whether the protein meets the amino acid requirements and whether the source might cause any adverse effect on the birds.

He mentioned that the requirements for growing and adult birds are less than for starting chicks and poults and that therefore some proteins may be unsatisfactory for young birds but may be satisfactory for older birds.

Dr. Kratzer evaluated 13 protein sources: cereals, fishmeal, meat and bone meal, blood meal, soybean oil meal, cottonseed meal, sesame seed oil meal, sunflower seed oil meal, safflower seed oil meal, linseed oil meal, rapeseed oil meal, algae and synthetic amino acids.

Wheat Straw Roughage

Dr. D. C. England, OSC animal husbandry department, reported that wheat straw or wheat chaff can serve as the principal or only roughage for wintering weaner calves fed as little as 2.5 lb. per day of a 20% protein concentrate.

He said that additions of 6 lb. of peavine silage or 2 lb. of alfalfa hay increased gains from .15 lb. per day to .5 lb. per day. Animals fed the roughages in these proportions with .5 lb. of 30% protein supplement remained strong and appeared to make skeletal growth but failed to gain weight.

"Subsequent gains on pasture were highest for lots that gained the least during wintering. Combined wintering-pasture gains were highest for lots that gained most during the wintering period." Dr. England stated.

He said weaner steers fed for slaughter on various levels of concentrate for 247 days showed greater economy of gains when daily concentrate during the latter half of the feeding period exceeded 1% of body weight.

CHICKS

(Continued from page 1)

chicks straight run, 61% pullet chicks and 6% cockerels.

Meanwhile, USDA also has issued its monthly hatchery report. While it is too early in the season to be significant, it is noted that production of egg-type chicks during January was up 11% from a year ago to a total of 35.5 million. It was pointed out that the demand for egg-type chicks is above a year ago, and the number of egg-type eggs in incubators on Feb. 1 was 10% more than a year earlier—indicating that initially at least the hatch is running above farmers' expressed intentions.

Production of egg-type chicks in January showed an increase over a year earlier in all regions except the New England and west south central states. Some of the largest gains were shown in the east north central and south Atlantic states.

The hatchery report data on eggs in incubators on Feb. 1 show that the largest percentage increases over a year ago are in the west north central, south Atlantic and east south central regions, which show increases of 27, 17 and 16%, respectively. Other increases are: North England, 5%; middle Atlantic, 7%; east north central, 4%; mountain states, 8%; Pacific Coast, 6%. The west south central region shows a 4% decrease.

As for the present laying flock, the crop report showed that the number of layers on farms on Feb. 1 totaled about 314 million—4% less than a year earlier. All regions show decreases except the south Atlantic and western states.

Prices received by producers for eggs in mid-January averaged 38.9¢ doz., compared with 44.4¢ a month earlier and 33.2¢ a year earlier.

G.L.F. STORE BURNS

ALLEGANY, N.Y.—Fire destroyed the Cooperative G.L.F. Service, Inc., feed store here recently. Loss was estimated at $100,000. Elmer Severton, manager, reported that the loss includes grinding machinery and an extensive line of farm supplies, fertilizer and feed.

FEED MILLS

(Continued from page 4)

Peripheral speed; (2) type and clearance of hammers; (3) feed rate and power; (4) screen openings and area. All other conditions being fairly constant, the product fineness is directly proportional to peripheral speeds. To a degree, product fineness is also proportional to clearance between hammer tip and casing or screen. Where a granular product is desired with a minimum of fines, it is often advisable to employ a thin cutting hammer rather than a heavy impact type of hammer and in many instances lower peripheral speed. An increasing rate of feed is associated with a coarser end product. Capacity, and therefore feed rate, is directly proportional to the applied power within mechanical limitations of a given unit. While it is essential to have sufficient size openings, the screen size can often be increased without appreciably affecting fineness. This is because at a high rotor speed, material tends to strike the screen at a tangent so that the effective opening is smaller than the designated perforation. There is a certain amount of additional impact provided due to the higher speed, resulting in smaller fractions as well. Capacity, however, varies directly with the percentage of open screen area.

MIXING—G. A. Carlson, Strong-Scott Mfg. Co., Minneapolis: In continuous mixing, twin and single rotor type units are commonly used. Mixing efficiency of both is good but can be no better than the percentage feeder settings in the line. Twin rotor advantages include: (1) slow speed for minimum breakage of certain ingredients; (2) higher capacity per H.P. per hour; (3) high capacity for light bulky materials. Single rotor advantages are: (1) High speed more adaptable to cold molasses application; (2) smaller unit requiring less area. Both will perform satisfactorily with dry materials. When liquids are added, they should be heated to recommended temperatures.

Most commonly used batch mixers are single screw vertical types and horizontal ribbon blenders. A majority of vertical mixers are used in custom mills, indicating this machine is satisfactory for many plants.

The single screw vertical mixer has these advantages over the horizontal: (1) Lower initial cost. (2) Less horsepower. (3) Less floor space compared to floor-mounted horizontals.

Horizontal ribbon blenders have these advantages: (1) Greater hourly tonnage, with shorter mixing time. (2) Better mixing efficiency. (3) Can be ceiling mounted, requiring no floor space. (4) Hopper scale loading and surge bin discharge adaptable for minimum time cycle. (5) Reversible ribbon mixer with two end discharges allows direct bulk delivery of mixed feed, with the mixer mounted overhead and one end extending through the building over the driveway. By reversing rotations, feed can be sacked inside the building. (6) Some custom plants mix up to 10% molasses satisfactorily, although certain problems are involved. (7) Contamination between batches can be eliminated with drop bottom doors which are used for clean out.

Most custom mills have separate machines for dry and liquid mixing. Molasses mixers may be single rotor high speed or twin rotor slow speed units.

Twin rotor continuous units will operate at 300-350 r.p.m. and deliver 1 to 2 tons per hour per H.P. on the drive. Single rotor high speed machines will run up to 1150 r.p.m., with a few at 1750, and deliver up to 1 ton per hour per H.P. on the drive. Both machines require extra power for liquid mixing.

With vertical single screw batch mixers, 20 minutes or longer is required for mixing. Twin screw units should mix in 10 minutes.

Ribbon blenders will mix dry ingredients to plus or minus .5% or better, checking for trace ingredients of .05% of the total batch. Tests indicate maximum mixing efficiency usually after two minutes. Recommended time is 3 to 5 minutes on most materials.

BULK HANDLING—Art Stegner, Butler Mfg. Co., Kansas City: Bulk feed helps to reduce labor in feed handling on the farm, and the attempt to reduce labor costs has been a prime factor in the increasing demand for bulk. However, bulk is not for those who have such small operations that they can't handle at least 2-ton loads of each feed. The cost of steel bins is now so small that the investment is relatively small. The real saving in bulk is in reduced labor, rodent control, minimum spillage and other factors, not in elimination of bag charges. Some large feeders have said they would be willing to pay a premium for bulk in order to save labor.

Development of bulk feed use can be likened to the development of handling petroleum products in bulk as amounts of certain products used on farms increase. Loss of brand identity, accurate inventory, storage problems and other things which concern feed men also confronted the oil industry, but customers came to demand bulk and its use increased, with the real savings coming in less and more efficient handling at dealer and farm levels.

Regarding the question of feed becoming stale in a tank, it is pointed out that what goes into a properly designed bulk feed tank comes out first.

There is no such thing as one good plan for converting a feed plant to receive, process and load out bulk materials; individual operations have some specific requirements of their own. However, smaller mills can adapt standard equipment, including handling and storing as well as processing, into their operations.

Storage and handling equipment is now available at substantially less cost than formerly. Outside steel galvanized tanks in capacities of 2 to 100 tons are available at a basic cost of about $25 per stored ton. Converted facilities or bin boxes also can be used for handling and storage.

One type of storage tank is the familiar galvanized steel tank of varying capacities and diameters. This may have one of two types of hopper—a 60° center discharge type or a 60° side discharge type. The corrugated side wall adds to rigidity and actually helps improve flow because the corrugation is sloped at 60°.

Bolted steel tanks of varying size and hopper type also are used, and there is a new bolted square tank consisting of 8-ft. panels which is expected to find increased use.

There is no secret formula for a bulk operation, and persons interested in it should counsel with local equipment and storage people.

CONVEYING BY AIR—(paper prepared by John Fischer of Sprout, Waldron & Co., Inc., and presented by Harold Alsted of this firm, located at Muncy, Pa.): Pneumatic conveying is now generally considered in designing new mills but not often enough when modernization of an old mill is contemplated. Advantages of these systems are:

(1) Clean and self-cleaning to a large extent, with little, if any, cross contamination and with easy dust control.

(2) Flexibility; can be installed wherever pipelines can be run; in combination with outdoor bulk storage, can virtually eliminate need for multi-floor mills.

(3) Safety; moving parts enclosed or guarded; adaptable to electronic or electrical control, helping to eliminate labor and human errors.

(4) Economy; "the most significant advantage"; more work can be done with fewer men, reducing labor costs; cost of installation may be lower.

(5) Limitations; pneumatic conveyors are expensive and may require more horsepower than other forms of conveying; in relatively short systems, certain features must offset increased cost; in longer systems, costs are no higher or less.

There are two major types of air systems—negative pressure (where material is drawn through lines by suction) and positive pressure. The "push-pull" type is a combination of the other two.

In considering an air handling system, one should keep in mind the following: (1) If it is desired to convey from many points or from a large area to one destination, use negative pressure system. (2) To convey from one point to several points, use positive pressure. (3) If it is desired to convey from many points to many destinations, with stationary equipment, use push-pull system.

The five major factors in design of any pneumatic system are rate of conveying; length of run, horizontally; height of vertical lift; number of bends in conveying line; nature of material handled.

Besides being used for conveying, air handling systems can serve as dryers or coolers on certain materials. In connection with adequate bulk storage, pneumatic conveying makes it possible to pack out on an eight-hour basis while producing on a 24-hour basis. These systems can be integrated with scales and controls for automatic batching. Use of air with size reduction equipment results in better output per H.P. hour.

NEW FEED MILL—Harold Fjarlie, Stanwood's Feed & Farm Supply, East Stanwood, Wash.: (Mr. Fjarlie showed slides of and described his new feed mill for processing of concentrates, grain and soybean meal into mixed feeds for his dairy and poultry area. The mill includes such features as pneumatic conveying, manual-automatic operations, provisions for bulk handling and other facilities which make it possible for the entire mill to be operated by two men with ease. The plant, designed and built by Reid-Strutt Co., Portland, will be described in more detail in a subsequent issue of Feedstuffs.)

Feedstuffs: Average Prices and Index Numbers, With Comparisons

Compiled by U.S. Department of Agriculture—Base Period 1947-49=100
(All prices of feeds and grains in dollars per ton)

	5-Year average 1951-55	Feb. 11, 1958	Feb. 18, 1958	Change from previous week	Per cent Feb. 18 is of 5-year average
OILSEED MEALS—					
Prices at principal markets:					
Soybean meal	85.30	62.70	64.35	+1.65	75
Cottonseed meal	74.25	61.75	63.35	+1.60	85
Linseed meal	73.35	58.85	58.85	..	80
Copra cake or meal	73.00	54.50	54.50	..	75
Peanut meal	75.15	54.00	54.50	+ .50	73
Index of weighted prices	99.9	76.1	77.9	+1.8	..
ANIMAL PROTEIN FEEDS—					
Prices at principal markets:					
Meat meal	94.60	82.25	85.40	+3.15	90
Tankage	96.35	89.85	91.10	+1.25	95
Fish meal	139.40	131.25	129.15	—2.10	93
Index of weighted prices	88.1	79.4	80.7	+1.3	..
GRAIN HIGH-PROTEIN FEEDS—					
Prices at principal markets:					
Gluten feed and meal	63.05	51.65	51.65	..	82
Distillers dried grains	68.80	58.40	58.40	..	85
Brewers dried grains	56.15	51.80	51.30	— .50	91
Index of weighted prices	89.3	74.5	74.4	—0.1	..
WHEAT MILLFEEDS—					
Prices at principal markets:					
Bran	53.40	42.20	42.30	+ .10	79
Middlings and shorts	56.45	42.15	42.40	+ .25	75
Index of weighted prices	90.4	69.5	69.8	+0.3	..
OTHER MILLFEEDS—					
Prices at principal markets:					
Hominy feed	61.15	44.30	43.95	— .35	72
Rice bran	39.30	32.00	32.00	..	81
Index of weighted prices	84.5	62.3	61.8	—0.5	..
ALFALFA MEAL—					
Prices at principal markets	59.75	51.80	52.10	+ .30	87
Index of weighted prices	105.8	91.7	92.2	+0.5	..
MOLASSES, FEEDING—					
Prices at principal markets	27.85	27.50	27.50	..	99
Index of weighted prices	82.9	81.8	81.8	..	..
ALL FEEDSTUFFS—					
Index of weighted prices	94.0	75.0	76.1	+1.1	..
FEED GRAINS—					
Prices at principal markets:					
Corn	55.00	37.50	37.90	+ .40	69
Oats	51.90	43.00	42.90	— .10	83
Barley	52.50	42.00	42.10	+ .10	80
Grain sorghums	53.60	40.40	40.60	+ .20	76
Index of weighted prices	87.7	62.2	62.7	+0.5	..

CORN ACREAGE

(Continued from page 1)

be required to honor all requests for corn and cotton participation in the 1958 acreage reserve program.

In its action this week the House Committee approved a tentative amount of not less than an additional $175 million for the 1958 corn and cotton acreage reserve program, with a commitment to increase its appropriation to such a level as USDA will submit to the Senate as its maximum requirement.

Soil Bank Cost

Subsequently it was learned from top level USDA officials that the final requirements to meet costs of corn and cotton farmer applicants for soil bank participation this crop year will amount to $225 million or more. This total will be given to the Senate Committee.

There is a strong likelihood that this new bill will pass. Since it carries other important supplemental appropriation items, there is little if any chance that it would be vetoed.

Stand-Still Legislation

The proposed stand-still legislation which would retain the 1957 price support levels for all crops in 1958 may gain favorable attention from Congress but there is great doubt that it could get White House approval.

Congressional leaders say Ezra Taft Benson, Secretary of Agriculture, would most surely recommend a veto, and there is presently no indication that the White House would repudiate the secretary.

Under soil bank operations for 1958 there is in effect a virtual cross-compliance which will prohibit corn or cotton farmers participating from planting other crops in corn or cotton land taken out of production and placed in the soil bank.

Previously the soil bank setup had no such ban. As farmers took corn, cotton and other crops out of production they simply shifted production into alternative crops and thereby went a long way in compounding the feed grain surplus.

MONTANA

(Continued from page 6)

three months following the experiment.

GETTING THE FEED BAG INTO THE FEED LOTS—Myron Carpenter, Peavey Feed Mills, Minneapolis: To me, the dealer is the most important man in the feed industry; he is not only our distributor but also is liaison man between laboratory and feeder. Dealers must have a good understanding of the fundamentals of nutrition. They have to be better informed than their best customer, and the customer is getting bigger and better.

It has been predicted that for every five dealers in business today, there will be only four five years from now. To stay in business, dealers must (1) win the confidence of all customers, especially the more specialized ones, and (2) help them become more efficient by reducing costs and showing them how to supplement grain and roughage.

Getting the modern feed bag out to the feed lots in the right amounts is the last mile and the longest one it has to make. Basic nutrition facts can make the last mile shorter and easier if they are applied.

One of the important recent developments is use of pelleted roughage and pelleted roughage-concentrate feeds for ruminants. Labor is a big thing, and this can help reduce labor. In the future, there may be more feeders hauling feedstuffs to nearby mills and having a complete ration ground and pelleted. Commercial feeders will buy roughage and supplement.

CURRENT NUTRITION EXPERIMENTS WITH CATTLE AND LAMBS AT MONTANA STATE COLLEGE—Dr. O. O. Thomas, Montana State: The effect of adding phosphorus and vitamin A to supplements fed weaned calves on winter range has been under study. The addition of vitamin A and phosphorus to the control pellet (containing barley, oats, soybean and linseed meal, salt, molasses and vitamin A) gave the greatest increase in gain. Although the gains were not as great as in the previous year, the addition of either vitamin A or phosphorus or a combination of the two increased gains the same as in the previous year. Calves fed 1 lb. of cottonseed meal pellets did not gain as much as calves fed 2 lb. of the control 20% protein pellet.

A study was made under feedlot conditions of the effect of adding Dynafac to rations for yearling cattle fed stilbestrol or implanted with stilbestrol or Synovex. The greatest gains were made by steers fed Dynafac and implanted with 36 mg. of stilbestrol. These steers gained 22% more than the controls and 10% more than those implanted with stilbestrol. Steers implanted with Synovex gained slightly less than those given stilbestrol. The greatest gains among heifers were shown by those fed Dynafac and implanted with 18 mg. of stilbestrol. Heifers fed Dynafac or stilbestrol gained from 8 to 37% more than the controls. Steers or heifers fed stilbestrol gained slightly more than those implanted with stilbestrol; however, steers or heifers fed Dynafac and implanted with stilbestrol gained more than those fed Dynafac and stilbestrol in combination. Steers fed Dynafac alone gained 5% more than controls, while heifers fed Dynafac alone gained 12% more than controls.

An experiment was started to test rations for fattening cattle in drylot which utilize alfalfa hay, straw, Montana-grown feed and by-products in various combinations and with or without added supplemental ingredients. Dehydrated alfalfa and Dynafac were used as variables. The greatest gains were made by steers fed a ration with alfalfa, rather than straw, as the roughage. Dynafac did not appear to increase gains in this test; however, slightly less feed was required per unit of gain.

A study has been conducted with stilbestrol and Dynafac for cattle self-fed grain on irrigated pasture. Net returns per steer were greatest for the control animals, with returns less for those getting stilbestrol orally or as an implant or Dynafac.

An experiment has been run on the effect of pelleting rations for fattening lambs with or without stilbestrol, Dynafac or Terramycin added. However, results are incomplete. Returns were greatest for those receiving stilbestrol. Regarding pelleting of complete rations, it appears that there will be more pelleted rations in feeding areas. With small groups, through, the returns may not offset the cost of pelleting.

WESTERN CANADIAN LIVESTOCK PROBLEMS — H. J. Hargrave, Dominion Experimental Farm, Lethbridge, Alberta: Urinary calculi or waterbelly has become a major cause of loss over a growing area, with death frequently following rupture of the bladder as a result of calculi in the urinary tract. The condition has been found on ranches, irrigated pastures and in feedlots. Recent experiments have disclosed additional information but have not led to any definite conclusions. There was no relationship between incidence and soil type or area. Additional amounts of calcium, silica and magnesium in rations did not significantly alter formation of calculi. Plans are being made to raise calculi-free calves from birth on controlled rations.

Calves raised on as little as 150 lb. of whole milk plus alfalfa hay and a feed containing vegetable protein are just as good after a year as those getting liberal milk at first. Calves get 5 lb. of the feed per day plus alfalfa and water. The formula, for 100 lb., includes: Oats 32, barley 5, wheat 10, bran 10, linseed meal 10, soybean meal 17.5, alfalfa meal 5, molasses 8, mineral mix 2.5, plus 80 000 units of vitamin A, 15,000 units of A and 50 mg. of riboflavin.

Of significance to range cattle operations is the fact that a man in Saskatchewan artificially inseminated 1,400 range cows. It had cost him $10,000 a year to maintain bull operations. Results have been outstanding.

In a study of stilbestrol implants, some steers were implanted when the pasture season began in May; some of these were reimplanted when the feedlot period began in October; others got their first implants at this time. Those reimplanted did not seem to get a boost. Those implanted for the first time in the feedlot made good gains.

A five-year study has resulted in advice to dairy farmers to use loose housing and milking parlor. Labor cost is one third less and barn overhead one half less; feed consumption is better; health of cows is better.

Four degrees of shelter were tested with steers. There was a pound of gain per day less with no shelter than when there was just a board fence.

POULTRY RESEARCH AT MONTANA STATE COLLEGE — Dr. George Davis, Montana State: We are doing some nutritional work, at present testing fat levels, with results not yet available. Last year egg production was not affected but feed efficiency was better. Also, water-soaked barley for poultry has been tested, and there has been some response from soaking wheat mixed feed.

In a management project on lighting for layers, results have been just as good with intermittent lighting (in a windowless house) of 25 minutes every 3 hours as with 14 consecutive hours of light. It's the dark period that brings stimulation of production, and we believe that a regular day and then 15 minutes of artificial light at midnight will bring results as good as other systems.

We also will do more work on effects of temperature on egg production. Present accepted information is based on a three-week study; we don't believe those results are accurate.

Other work will be done on such things as shelf life of eggs and poultry, new uses of old hens, etc. And more work will be done on available feedstuffs in the area.

RESEARCH WILL POINT THE WAY—Jerry Sotola, Armour's Livestock Bureau, Armour & Co., Chicago: The importance of research to the livestock and feed industries cannot be overemphasized. One example is in the use of surplus animal fats, stabilized with antioxidants and fed back to animals.

The Armour product Dynafac is a chemobiotic made from fat and used as a feed additive. There is not always an increase in gain but an improvement in feed efficiency.

In one experiment with cattle, control animals showed a daily gain of 2.15 lb. Addition of Dynafac to the ration brought average gain to 2.60 lb. and improved yield and dressing percentage. Feeding of stilbestrol resulted in gains of 2.70 lb. A combination of 2 gm. of Dynafac and 10 mg. of stilbestrol resulted in average daily gains of 2.84 lb.

Dynafac also has been found of benefit in other types of cattle rations, in helping in the bloat problem, in improving gains and reducing enterotoxemia losses in lambs.

Meanwhile, there are great research needs in ruminant knowledge. There is a lot to learn about trace minerals. In baby pigs, injections of iron-dextran have cut anemia losses greatly. Pelleting of livestock rations will increase.

ANIMAL FATS IN THE LIVESTOCK AND MEAT INDUSTRY—Carl F. Neumann, National Livestock and Meat Board, Chicago: One of the problems of the livestock and meat industry is the use of so-called non-edible fats. It is estimated that we are now using inedible fats in feeds at a rate of 300 million pounds annually—or 10 to 15% of annual production of these fats.

Regarding the debated question of fat in human diets and heart disease, a recent American Medical Assn. report said that no need is now seen for a reduction of fat in diets except to reduce calories to control weight.

We in this country have developed an appreciation of quality in meats. We like beef with, among other things, the juiciness and tenderness associated with meat from animals carrying a high degree of finish. We have been a bit alarmed at attention to consumer surveys that indicate the consumer wants lean meat. From what we have found, these surveys have been set up to prove the consumer prefers lean meat. The nation's retailers, who tally votes to the jingling of a cash register, tell us the consumer does want lean beef, but she wants the lean from carcasses possessing characteristics of at least a top U.S. good or choice. The specialty demand for prime beef also is likely to continue.

(In answer to a question.) I don't believe that enzyme tenderizers will have a great effect on grades of beef produced. People prefer the flavor of fed meat. (This is in contrast to an increase in use of tenderizers reported elsewhere in Feedstuffs.)

NEW DRUGS FOR CATTLE GRUB CONTROL — Donald K. Scharff, Montana Experiment Station: For the first time, a potentially practical method for control of cattle grubs has been developed in the form of the systemic insecticide Trolene (Dow-ET-57). In Montana tests, 99% control was obtained. The present form of application is orally, with boluses and a balling gun.

Optimum time for treatment is Sept. 1 to Dec. 15. Since we experienced some reactions to treatments made in December, it may be necessary to recommend avoidance of very late fall treatment. Some problems have been experienced by cattle men, but if the operation is done right, there would be no problems.

A low level feeding basis is being tried. If effective, it would be easier to treat the animals, putting the drug in the supplement.

Other systemic insecticides also are being tried.

With Trolene, it is important that cattle have free access to feed and water before and after treatment. Cattle should not be treated if temperatures are averaging 40° or lower and if cattle are being fed heavy gaining diets or feeds containing urea.

EXTENSION RANGE LIVESTOCK NUTRITION SCHOOL: (A special feature of the conference was a demonstration of how the Montana extension service conducts winter livestock nutrition meetings for ranchers. The purpose of the schools is to explain and discuss nutritional requirements of cattle and sheep being wintered on either range or hay, and to show how these needs may be met with various forages and supplemental feeds. Taking part in the demonstration were E. P. Orcutt, N. A. Jacobsen and Karl G. Parker.)

CURRENT ADVANCES IN FEED CONTROL TERMINOLOGY—Robert Weatherall, Montana Department of Agriculture: Feed control officials last fall adopted several new or revised ingredient definitions, including such products as alfalfa products, barley products, oat products and feeding phosphoric acid.

Much simpler names for medicaments used in feeds can be expected in the not too distant future.

Control officials in Montana, Minnesota, North and South Dakota, Wyoming and Nebraska are attempting to develop a uniform label(s) for the various types of feeds common to the area.

INDUSTRIAL UTILIZATION OF BARLEY—Dr. Kenneth Goering, professor of chemistry, Montana State College: Research has been in progress at Montana State to find ways of using surplus barley as a raw material for production of other products. One line of investigation is in the use of barley for production of starch and protein and certain other materials.

The hull from making barley flour to produce starch probably could be used as a fuel. The bran and middlings fraction should be suitable for use in feeds. The protein obtained in processing should be very good for feeding.

In view of the fact that the cost of a bushel of corn in the Corn Belt equals the cost of 100 lb. of barley in Montana and since more starch can be obtained from 100 lb. of barley than from a bushel of corn, it appears that the operation should be successful. The starch could be converted to syrup which would find a ready market in the Northwest. It would require only minor modifications to convert a beet sugar factory into a plant to make syrup equivalent to corn syrup.

MARKETS

(Continued from page 2)

country feed stores on snow-clogged roads. A trade source said farmers would have to feed their cattle straight home-grown grains and when these supplies were depleted they would have to resort to hay.

He added, "It won't be a balanced diet, but it will help to maintain body heat and weight." Another source said if predicted new storms did occur there could be some loss of cattle.

It was expected that after the weather clears and the roads become passable a little rush on dairy feeds would occur.

Egg mashes were the sales leaders, with some chick starter, broiler, turkey starter and breeder feeds showing up in the tonnage.

Running time of formula feed manufacturers averaged 40 hours last week.

Southeast

Continued extremely cold weather throughout the entire territory held feed demand at a good rate this past week. Feed mill running time was reported to be good and inventories at feed plants and feed stores were reported to be on the low side.

Some sections of the state of Florida where cattle losses were reported to be extremely heavy were being shipped small grains by the government.

Slow running time caught up with citrus pulp producers who have been expecting this situation to develop for several weeks. As a result, production dropped off sharply and was expected to remain slow for from three to four weeks. Total tonnage produced from the late season orange was expected to be considerably less than that from last year's crop. The market pricewise firmed up and some sellers who have been discounting the general market price were reported to be sold out at least for the time being.

Prices advanced on practically all feed ingredients and, as a result, most mixed feeds prices advanced accordingly. Nearby supplies of protein meals were very scarce, caused in part by a shut-off of gas supplies to plants using natural gas for fuel. In many cases this caused production to halt completely until fuel was made available.

High protein cattle pellets were in great demand from several sections; however, due to the tight supply situation, other types of feeds had to be used to satisfy demand. Baby chick placements in the north Georgia producing area were running high and broiler prices have held very well.

California

There was no noticeable change in the level of formula feed sales and production for the week ending Feb. 19. Generally speaking, prices on most items remained unchanged, but soybean oil meal was very firm and by the end of the week had registered a gain of $3.95 ton. Part of this was due to the recent freight increase that became effective Feb. 15.

The alfaifa hay market showed signs of being top heavy. While prices remained unchanged, still the demand was very slow and furthermore considerable quantities of poor feeding types were being offered and proved difficult to move.

As with all items, the trade bought very sparingly with one eye on the approaching tax day, March 3.

Usage of barley in California along with supplemental feeds continued at a restricted level due to unusually heavy supplies of green feed. Pasture and range conditions as of Feb. 1 were reported as 84% versus only 58% a year ago. Additional heavy rains covered most of the state and crop conditions were looking very good.

Pacific Northwest

A mixed price trend developed during last week's feed market trading.

Soybean meal prices gained $1 a ton as a reflection of eastern shipping point advances while Peruvian herring meal was priced 5@10¢ a unit higher. Corn sold 75¢ a ton higher reflecting extremely cold weather in many sections of the nation.

Millfeed prices declined $1 a ton in front of very slow trading and whole barley was quoted as much as 50¢ a ton lower.

Alfalfa meal listings held unchanged during a sluggish trade while molasses beet pulp moved readily at unchanged values. Meat scraps turned stronger as the result of limited supplies and a good demand.

Feed mixers at Seattle and Portland reported that formula feed trading was moderate and on the dependable side with broiler and poultry starters finding the best movement.

Dairy feed sales continued fair, but somewhat restricted because of mild weather and good supplies of feed grains, hay and available green feed.

Ohio Valley

Although below zero temperatures prevailed in the Ohio Valley, the severe weather had no appreciable effect on sales of formula feeds, manufacturers reported. While sales were continuing at the good tonnages of recent weeks, an even more active market likely will develop, should the extremely cold weather continue into next week, as was predicted.

Only an inch or so of snow fell this week in the valley area, so mills were able to make customary prompt truck deliveries to nearby retail outlets. However, on longer hauls to snow-bound areas some delivery delays were reported, and several manufacturers said rail receipts of ingredients and supplies were being delayed as much as three to six days.

Area manufacturers noted with satisfaction that this situation was reflected in continuing steady rebuilding of herds and flocks, which made it evident that farmers were confident the current economic recession wasn't likely to continue long enough to affect retail demands adversely.

South Central

Reports from the feed mills about their current demand were quite uniform in that business was described as "pretty good." Their volume, so far this month, was equal to that of last month, a pleasant surprise to some. The let-down sometimes experienced at this period of the year was entirely absent. Instead mills were encountering a steady uniform demand that indicated it would continue into the spring season.

Every mill called attention to its excellent hog feed demand. It held steady for hog supplements and increased on sow feeds and pig starters. Egg mashes were holding up well. Chick starters, although moving in modest quantities, gave encouragement for a chick season that would be better than last year's.

Strong prices for soybean meal and meat proteins were expected to lift price lists 50¢@$1 a ton for the week.

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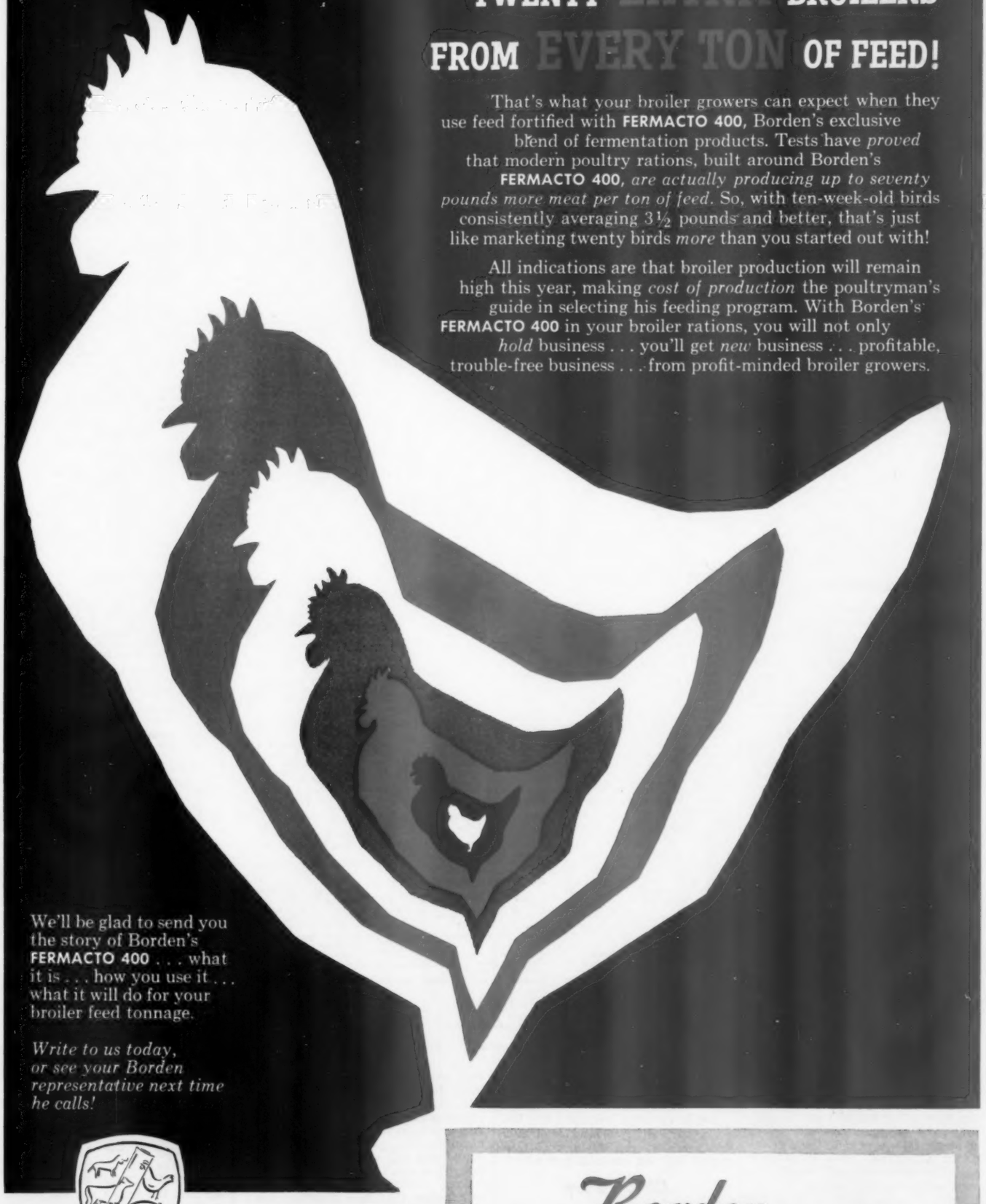

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